

Hearing of The  
SENATE FACT FINDING COMMITTEE ON NATURAL RESOURCES

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The Methods, Materials, Procedures  
Laws And Law Enforcement Relating To  
Fire Prevention *hearing*

Held In  
Capitol Building  
Sacramento, California

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Monday, November 27, 1961.  
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## A P P E A R A N C E S

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Senator J. Howard Williams, Chairman

Senator Stanley Arnold

Senator Ronald G. Cameron

Senator Randolph Collier

Senator Virgil O'Sullivan

Senator Aaron W. Quick

Senator Charles Brown, Vice Chairman

Senator John C. Begovich

---oOo---

Monday, November 27, 1961

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Monday, November 27, 1961, 10:00 O'clock, A.M.

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CHAIRMAN WILLIAMS: The Committee will be in order, please. In the way of an opening statement I have a prepared statement to make. This is the Senate Fact Finding Committee on Natural Resources. Before I read it I would like to introduce the members of the Committee. Senator Randolph Collier is on my far left from Yreka, Stanley Arnold from Susanville, and Senator Ronald Cameron from Clipper Gap. On my immediate right is Senator Aaron Quick from El Centro. I am Howard Williams, and Ford B. Ford will be here shortly, and Miss Alice Book is the official reporter.

This hearing of the Senate Fact Finding Committee on Natural Resources has been called to listen to the views of the agencies of government responsible for fire protection of private and public lands and of those segments of industry, recreation and the general public affected by and expressing interest in the many phases ~~involving~~ fire prevention. The Committee had included the subject of fire prevention within its overall scope of study before the current disastrous fire year began and certainly the losses suffered to date in 1961 indicate that it is a subject which merits the serious consideration and cooperation of every person in the State.

As you know, well over 300,000 acres of valuable timber, watershed and range lands have already been burned this year taking its toll in resources, lives and dollars. This represents

a 200 percent increase over the average acreage burned in the last five years. Certainly the adverse weather conditions have made a major contribution to the problem. However, it has been reported that there has been a distinct increase in incendiarism or intentionally-set fires. The fire suppression budget of the Division of Forestry has increased from 9.3 million dollars in 1955 to over 18 million dollars in the current fiscal year. It is economically impossible to provide sufficient funds to locate fire crews so as to detect and extinguish every fire before it reaches major proportions.

It is not inconceivable, however, to cut down on the number of man-caused fires and make preparations to retard the spread of those fires which do start. The Committee feels this is an area of great potential. Recognizing that fire prevention includes innumerable approaches such as hazard reduction, effective law enforcement and dissemination of appropriate information, it is the Committee's desire that testimony be confined as nearly as possible to the subject of fire prevention. In the event it appears that all desiring to testify cannot be heard today, the Committee will adjourn around 5:00 o'clock and will reconvene at 9:30 tomorrow morning in this room. Those who cannot appear to submit their testimony tomorrow are requested to so advise the Chairman so that every effort can be made to hear them today.

This hearing is being recorded. Those having written statements are requested to give a copy to the Reporter and other copies to the Sergeant-at-Arms for distribution to the Committee

members. We are going to try to hear everyone that we possibly can today. However, we realize that some of you people have commitments in which you are going to have to leave this morning and probably won't be here tomorrow. If we know of those cases we will do our best to try to squeeze you in some way.

The first person I want to call now is the Director of the Department of Conservation, Mr. De Witt Nelson, who when he comes up I'm told will bring other people with him. Will you come up, Mr. Nelson, please and bring your staff.

MR. NELSON: Mr. Raymond. Mr. Chairman and Members of the Committee, I am De Witt Nelson, the Director of the Department of Conservation of which the Division of Forestry is a component. In my statement I'll deal primarily with the historical background and the development of major legislation dealing with the fire problem over the past several decades, and Mr. Raymond, the State Forester, will speak to the current problems and suggested actions that might be considered by your Committee in the field of fire prevention.

The State of California includes an area slightly in excess of 100 million acres. It is about equally divided between public and private land ownership. It has over 17 million acres of commercial forest land, a little more than half of this is in public ownership. The timber on these lands according to the most recent data available is in excess of 300 billion board feet. The State ranks second in the Nation in lumber production and the income and the jobs it provides has a prominent role in

the State's economy. Its forage and grasslands exceed 27 million acres and the livestock industry contributes greatly towards California leading all other states in cash farm income. The combined area of forest, watershed, and range lands in the State exceeds 62 million acres. This represents the area requiring protection from fire by the various forest and fire protection organizations.

In addition to the above resources, these lands provide minerals, oil and gas, fish and wildlife habitat, valuable watershed to protect the soils from erosion and flood damage, and resort and recreational areas.

To just give you a brief picture of the protection areas in the State, here is a map of the State of California. The dark areas indicate and represent those lands protected by the United States Forest Service. That is the dark green areas. The brown areas are National parks and National monuments. I think you will all recognize those. Now, the light green areas indicate those lands that are directly protected by the Division of Forestry and by its existing organization. The yellow lands indicate those lands that are contracted for protection with the various counties and this is rural protection primarily in the valley lands covering both structural and resource protection. Those are lands that under the law are not State-responsibility lands. Now, the dark areas are--wait a minute here. The cross-hatched areas represented in Los Angeles, Ventura, Santa Barbara, Kern, San Mateo, and Marin Counties are protected by those counties



under contract with the Division of Forestry wherein the State reimburses those counties for doing the State portion of the protection job. So you see the protection responsibility is pretty well scattered between a number of protection organizations.

From a resource point of view, we have 18-1/2 million acres of commercial timber. The above figure of 17 million acres is that of existing commercial forest lands, while there are about 1-1/2 million acres of land in young growth and potential forest land.

Brush and minor woodlands cover 23-1/2 million acres; pasture and range, 20 million; cropland in farms, 10 million acres; urban and industrial, 4 million; desert, barren and marsh, 24 million. The figures in parentheses are adjusted to bring these figures up to date in line with the 1958 blue book.

(Over half of the land area of California is major water-yielding wildland.) Figures of acreage in parenthesis adjusted to more closely reflect California Blue Book - 1958 data.

#### POPULATION GROWTH

California's land use problems are a result of ever-mounting pressure of a vigorous and rapidly expanding population on what was rightfully considered, in earlier days, to be our vast and unlimited natural resources.

From comparative obscurity in 1850, California has attracted millions of people from other areas. With a population of about 3-1/2 million in 1920 and 5-1/2 million in 1930 it jumped

to about 7 million in 1940, surged to over 10-1/2 million in 1950 and soared to 16-1/2 million at this time. By 1970 it is expected to reach a staggering 23 million. If it continues at this rate, by 1980 we can expect approximately 29 million people in our State.

This explosive population increase is taxing, and in many areas over-taxing, the ability of various governmental agencies to keep abreast of the demands for services and orderly development to cope with such a rapid expansion.

It is placing increased demands on resources and resource managers in both private and public operations.

#### POPULATION PRESSURES AND DEVELOPMENTS

The population pressure on natural resources is one of California's crucial development problems. The incorporation of cities to preserve dairy farming, the immense effort to replenish underground water basins and to repel salinity, the activation of the California Water Plan, the need for providing more recreation areas and facilities, and the staggering cost of acquiring land for schools, roads, and other purposes all dramatize the fact that our growth and development are creating and placing tremendous pressures and strains upon forests, watersheds, and rangelands as well as lands now used for other purposes.

The "urban sprawl" and rural development is a challenge to our immediate future, and one that is today severely affecting the availability of our resources, and land use.

The former frontiers of the primeval forest and traditional

rangeland areas are slowly but surely being pushed back further and further by the encroachment of land use for other necessary purposes. Rather ironically, but nevertheless logically, the demands for more resources to build and maintain industries and employment increase proportionately in relation to this "sprawl" and encroachment.

The following are some statistics which I will review hastily because the Committee has them before them, but it shows the population growth by decades from 1930 to 1960, 5-1/2 million in 1930 to 15-1/2 in 1960, 16-1/2 now.

The cattle population has about doubled in that length of time, while the sheep population has just about reduced to 1/2 of what it was in 1930, from 3-1/4 million to 1-3/4 million.

Persons entering the State for pleasure reached from 800,000 to 4-1/2 million in 1958.

In 1930 we had 155 sawmills; in 1940 we had 287; in 1950, 801; and in 1960, 1,677.

Those reflect the economic cycle, war effort and so forth.

Acres of new slash, and these are current figures. For the year 1930, 52,000 acres of new slash; 1940, 67,000; 1950, 145,000; and 1959, 206,000.

This is in relation to production which is given on the bottom right under that. Increased production in the forest products went from 1-1/2 million board feet in 1930 to over 6 billion feet in 1959.

Hunters in that same period trebled, and fishermen went



from a quarter of a million to a million and a half.

Division of Recreation reports 235 million activity days of outdoor recreation in 1958 and estimates because of increased time, income, and mobility that 1980 will have 1,666,099,300 activity days.

|      |   |
|------|---|
| 1958 | 18,331,205 Camper Days                      |
| 1960 | 23,512,240 Visitor Days in National Forests |
| 1958 | 22,441,600 Fisherman Days                   |
| 1958 | 7,484,344 Hunter Days                       |

From 1958 to 1980 recreation is estimated to increase 6 times its present level.

#### FIRE HISTORY (Forest Fires)

An over-all look at nearly three decades of Division of Forestry fire history by ten-year periods shown in relationship to population at the start and the end of each period is as follows:

We have taken 1932 to 1940 as a base period. During that period we had an average--well, our population ranged from 5-3/4 million to 7 million in that decade with an average number of fires being 1600 and the average burned acres 206,000, with an average improvement damage of \$138,000.

In the decade from 1941 to 1950 the population jumped from 7 million to 10-1/2 million. The average number of fires was about 2200 with 281,000 acres burned and improvement damages at \$647,000.

In the decade 1951 to 1960 the population doubled from

10-1/2 to 15-3/4 million with 2333 fires and an average acreage burned of 130,000 acres, with an improvement damage of \$783,000.

These are rather interesting to compare because the relationship to population increase and the number of population increase from 1931 to 1940 is 23%. The next decade was 50%; the decade from 1951 to 1960 was 50%, while the population increase from 1931 to 1960 was 175%, and from 1941 to 1960 it was 124%.

Now, this tied into fire incident, the 1941 to 1950 compared with the base period of 1932 to 1940, we had an increase of 34% in the number of fires as opposed to a 50% increase in population. During the 1951 to 1960 decade compared to the base period of 1932 to 1940 we had a 42% increase in number of fires as opposed to 124% population increase.

On the acreage burned, in the 1941 to 1950 period, it showed a 36% increase in the number of acres burned while the 1951 to 1960 compared with the same base period shows a 37% decrease in average acres burned.

However, the value of the improvements went up in 1941 to 1950 by 376% and the 1951 to 1960 value improvements went up by 467%.

This represents the urban and rural sprawl into our wild-land areas and the greater and more improvements and the increased value of those improvements.

Now, we come down to the 1961 history which is just now being closed, we hope. This current years we have had 283 lightning fires and 2,892 man-caused fires which burned 314,488 acres

with a \$4,318,706.00 improvement damage during this period and I want to call your attention to the fact that this includes only those lands under the direct protection of the Division of Forestry. It does not include those fires in Los Angeles City and County recently.

SENATOR COLLIER: How many acres did you say were burned this year?

MR. NELSON: 314,000.

SENATOR COLLIER: How many acres under your protection?

MR. NELSON: 26 million under our direct protection. On lightning fires we have an average of 250 annually, so we weren't too far off on the average this year. We had a low of 83 in 1957 and a high of 473 in 1958. Of special significance is the following:

SENATOR CAMERON: Before you go on, this 1961 history, is that only under the control of State Division of Forestry?

MR. NELSON: That is right.

SENATOR CAMERON: Your other figures, is that State or--

MR. NELSON: That is just the State. All of these figures deal only with the State. It is our own direct protection figures. From 1931 to 1940 which was the years of the three-C's, Civilian Conservation Corps, we had 6,000 trained fire fighters which were available for fire protection purposes. From

1941 to 1950 we had the World War II and post-war era when the Division lost many of its trained personnel to the Armed Services, but we did fortunately have help from the Armed Services on major fires, but we will had an average burn during that period of 28,000 acres.

From 1951 to 1960, we had the area of population pressures when the Division was becoming adjusted to post-war adjustment, excepting the Korean conflict. Note the steadily increasing dollar damage losses due in part to the inflated dollar value and more important to the constantly increasing losses of improvements involved in forest and watershed areas. No longer could the Division pick its spot to establish fire-control lines.

The 1961 figures dramatically illustrate the dollar damage of improvements and the increasing problem the Division encounters and all of the other protection agencies encounter by not always being able to focus its initial efforts on perimeter control of the fire because of the necessity of diverting its efforts to protecting life and property.

#### DIVISION OF FORESTRY FIRE PLANS

a) - In the late 1930's the Division began to take an inventory of its physical condition and to study and prepare plans for an orderly development of fire protection needs. An intensive lookout detection study was planned and a completed lookout system established. In 1938 the State Board of Forestry adopted a resolution whereby counties would pay their equitable proportion of protection affecting valley and rural lands. At this same time



the Board directed the State Forester to forthwith prepare, "An adequate fire prevention, protection and suppression program, by counties, to be coordinated with a State-wide comprehensive program for the purpose of budget making and for presentation to the public for support." A supplemental plan was prepared and submitted to the Board. This plan costing \$2,000,000 was introduced in January, 1939, to the Legislature; however, it failed to pass.

b) - The 1940 Fire Plan (Clar Plan) was developed into a natural extension of the supplemental budget plan of 1938. This was the plan that formed the basic need for State fire protection and with implementation was approved in 1942 following the start of World War II. It provided needed manpower and equipment and by using existing facilities was made an integral part of the Aircraft Warning System and the Civil Defense Program. This plan further provided for designation of areas for which the State was responsible for fire protection and a detailed physical plan including manpower and equipment, to accomplish an adequate job of fire control at that time. World War II provided the impetus to gain the necessary support of the State Legislature. It also created an impact on forest protection agencies from thousands of servicemen receiving military training in many high-hazardous areas, installation of numerous military basis, and the mass importation of aircraft, shipyard, related defense and other industry labor forces.

c) - The legislative act creating a committee to investigate

the forest situation in California was passed by the legislature and subsequently approved by the Governor on June 8, 1943, (Chapter 1086).

The Committee, chairmanned by Senator George M. Biggar of Covelo, consisted of members of the Senate, Assembly, Director of Natural Resources, and Chairman of the Board of Forestry. This Committee made an extensive and exhaustive study of the forest, watershed, range, and fire problems in California. Numerous public hearings were held throughout the State.

d) - As a result of the study conducted by this Committee and through legislative efforts at the 1945 Session, great strides were made in establishing our present forestry and range programs as well as fire protection. It created new laws relating to State forests, the State Forest Practice Act and brush range improvement providing for controlled burning, experimentation, and research.

The "Hatfield Act" (Sec. 4000.2 - 4000.3 - 4000.4 Pub. Res. Code), again 1945, established a classification of lands of State Responsibility for fire protection, whereby, "the State Board of Forestry shall classify the lands of the State, without regard to any classification of lands made by or for any Federal agency or purpose, for the purpose of determining areas thereof in which the financial responsibility of preventing and suppressing fires shall be primarily the responsibility of the State. The prevention and suppression of fires in areas not so classified is primarily the responsibility of local or Federal agencies", and further provided that the Board shall include within

the areas of State Responsibility the forest and watershed lands and lands in areas principally useful for range or forage purposes which are contiguous to forest and watershed lands, and further that the Board shall exclude from such areas lands owned or controlled by the Federal Government, lands within the exterior boundaries of incorporated cities, and such other lands within the State as are not included in State Responsibility areas and classified as forest, watershed, or range lands for that purpose.

State responsibility for prevention and suppression of fires on State and private lands amounts to 35,254,302 acres and is protected as follows:

|   |                  |
|---|------------------|
| California Division of Forestry direct protection | 26,026,560 acres |
| Protected by contract -- U. S. Forest Service     | 4,797,985 acres  |

You all understand that there are a good many privately owned lands inside the National Forest and some State lands, and on those lands we contract with the Forest Service to do the State job.

And lands protected by the six counties referred to on the map amounts to about 4,429,757 acres making a total of 35,254,302.

In addition to the 26 million acres of State Responsibility lands directly protected by the Division, an additional 3-1/2 million acres is protected by it under contract with the

Federal Government and those are Bureau of Land Management, Indian land and so forth, and slightly over 6,000,000 acres of agricultural and rural areas under contract by agreements with 22 counties for local responsibility areas, what we often refer to as zone 3.

Federal lands in California requiring protection amount to 27,000,000 acres; the majority of it being protected by the U. S. Forest Service.

Throughout California fire protection is provided by various Federal, State, County, City, Fire Districts, and other local jurisdictions.

d) - In 1945 the cooperative forestry honor camp program was started in cooperation with the Department of Corrections. In 1946 an "adult honor camp" was established. By 1947 this program had expanded to include four camps. By 1957 it had grown to three Youth Authority Camps. plus three spike camps, and 15 adult honor camps totaling 1,485 adult inmates and juvenile wards.

A Senate Interim Committee on Natural Resources, pursuant to Senate Resolution No. 162, adopted June 8, 1955, chairmanned by Senator Harold T. Johnson, conducted a study and submitted its report on Prison Labor and Forestry Camps on March 19, 1957. This report recognized the beneficial use of prison labor in the protection of our natural resources and the equally important dual benefits in the rehabilitation of inmates and wards working on conservation projects.



In 1959 the present administration under Governor Brown's leadership realizing the importance of these benefits, the increased need for greater conservation effort, and the over-taxing of existing facilities at the main institutions, passed legislation and provided budgeted funds for an expansion of the program. The present Conservation Camp Program as it is now called, consists of 4 Youth Authority camps plus three spike camps (345 men) and 25 adult camps (1,880 men) for a total population of 2,225 men. Seven additional camps are scheduled for opening during the next two years, adding 560 men, which will then total 36 camps, 3 spike camps, and about 2,800 adult inmates and juvenile wards. It should be noted here that pursuant to Senate Resolution 135, adopted May 25, 1959, the Senate Fact Finding Committee on Governmental Administration studied and subsequently reported on the Expanded Use of Prison Inmates in the Conservation Program. Senator Stanley Arnold was Chairman of this Committee.

The above does not include the Department of Corrections Conservation Center in Lassen County or the Branch Centers planned for Humboldt and Tuolumne Counties which are in various stages of planning or preliminary construction phases.

The Conservation Camp Program has assisted tremendously in making progress on conservation projects involving our natural resources. Man hours involving fire suppression and control by these trained forces, that is fire fighting and control, average about 600,000 man hours annually.

In 1959 camp crews provided 642,769 man hours of fire

suppression.

In 1960 camp crews provided 428,383 man hours of fire suppression.

By October 31, 1961, camp crews provided 603,366 man hours of fire suppression. I might say here they are made available to the cooperating agencies who are also on the fire protection and fire line and many of them were active in the Bel Air and other fires in Los Angeles County.

SENATOR BROWN: Does the Federal Government use those?

MR. NELSON: Yes, they can use them on emergency operations such as fire fighting.

SENATOR COLLIER: How do you get around the Federal law--

MR. NELSON: That is an Executive Order.

SENATOR COLLIER: Using them on Federal lands?

MR. NELSON: They can do it under emergency conditions such as fire fighting.

SENATOR COLLIER: We haven't been able to get that rescinded yet.

MR. NELSON: No, we have had no success at all, but they have no restrictions on emergency use.

Depending on the degree of use and time devoted to fire suppression activity by these crews annually, the bulk of the remaining man-hour work time is devoted to a variety of pre-fire suppression projects including the construction and

maintenance of roads, telephone lines, firebreaks, fuelbreaks, hazard reduction, water storage reservoirs, heliports, and other similar or related projects.

f) - In addition to the studies, interest, and progress which has resulted from the efforts of the legislature, it is noteworthy to also point out the contribution made to our fire prevention efforts by the California Fire Prevention Committee. This Committee formed in 1947 consisted of about 400 leaders of large business concerns and industries, civic and promotional organizations, labor and agricultural groups, newspapers, television and radio, transit and advertising agencies, utilities, military, Federal, State and local government representatives and others. This Committee assists in drawing the people's attention to fire prevention and the dangers of man-caused forest fires. Two meetings are held in the spring of each year, one in Northern California and one in Southern California. The interest and assistance instead of diminishing is continuing to increase. They have contributed tremendously in developing public awareness of the necessity for care with fire.

g) - The re-evaluation of the Division's fire plan has continued since 1945. In 1950 they re-appraised their needs and prepared a fire plan to reflect the current needs for fire protection at that time. Again in 1956 they reviewed their total minimum needs to keep its forest and range program, fire protection organization and facilities in step with its increasing fire protection responsibilities. Since that time the Board of

Forestry and the Division has annually reviewed the plan in the light of increasing demands and changes and the need for manpower, equipment, and facilities. This is now known as the Division's Organizational Inventory and Plan.

The Plan has never been fully implemented. It is presently budgeted to about 80% of the total needs.

The Division has seriously considered in this Plan only those items required for its present needs. It has not projected the plan for its anticipated need five or ten years in the future. As a result of this deficiency, lag exists, and if and when some of the needs are budgeted the current lag as of that time continues to reflect a similar degree of need in the unbudgeted portions of organization and facilities of the Plan.

#### THE CALIFORNIA FIRE PROBLEM:

The fire problem in California is directly and seriously influenced by a number of factors:

1. Long, dry hot periods devoid of precipitation accentuate and prolong the normal fire season. Extreme winds, low humidity, and high temperatures increase the severity during such periods which contribute to the conflagration potential and "fire storm" conditions.
2. Existence of a wide variety of highly flammable natural vegetative growth - grass, brush and timber fuels, lend themselves to ease of ignition and burning intensity.
3. Steep, rugged, and rocky terrain create difficult problems in fire control.



4. The cumulative effects of sub-normal precipitation during the past 4 years has created areas of dead or dying fuels because of the lack of sufficient moisture to sustain normal growth. I might point out here that the fuel moisture in our brush species reached the lowest ever recorded this year and thousands of acres of that brush is dying because of that drought.

5. The rapidly increasing movement of people into the wildland areas, involving many subdivision developments for permanent year-round and part-time occupancy, as well as other structures, is taking place at a tremendous rate. Many of these are of sub-standard construction, lacking adequate water facilities and placed without too much regard to the danger of the flash fuels adjacent to or surrounding them.

It seems appropriate at this point to refer to studies conducted by the Senate Interim Committee on Subdivision Development and Planning created by Senate Resolution No. 178 during the 1953 Legislative Session and No. 187 of the 1957 General Session. Senator Arthur H. Breed, Jr., was Chairman of this Committee. An advisory sub-committee was appointed by Senator Breed to assist his Committee to ascertain, study and analyze all facts relating to subdivision development and planning, the regulation thereof, and the enforcement of all laws relating thereto. Some of the problems of the advisory committee pertaining to fire prevention included water supply, access roads (dead-end streets) (bridges), spacing of buildings, proper notification of fire departments regarding road work or closed streets,

names and numbering of streets, long blocks - no alleys, and wildland exposures. Members of the advisory sub-committee included representatives of the National Board of Fire Underwriters, State Fire Marshal's Office Los Angeles County, County Supervisors' Association, and the Division of Forestry. This study resulted in a "Sub-division Manual" submitted to the Legislature on March 26, 1959.

6. The pressures on the wildland areas for recreational uses of all types, other activities, and operations continue at an accelerated rate.

7. As a result of many of these "fire problems" the fire protection agencies no longer have a choice of when or where they will establish fire control lines. These must be determined by giving full consideration to protection of life and property in areas where they previously did not exist to any great extent.

8. The disregard by some people for the rights and privilege of others is definitely apparent. This becomes evident in the fires that originate through carelessness, negligence, lack of due diligence, or wilful disregard of the laws that exist for the protection of the public. In many cases good, ordinary common-sense is completely lacking.

9. It is evident that many people no longer feel that it is necessary for them to assume any responsibility in preventing or stopping the spread of a wildfire. They look to the protection agencies for such service and rely upon it. Because of so many hazards and the sparsity of fire crews, many people live

under a false sense of security.

#### CONCLUSION

In reviewing the foregoing it becomes apparent and it is generally recognized that past studies and programs and also budgeting have directed the greatest emphasis to the needs for fire control. In looking at the fire history compared with the State's expansion and growth, it would appear that the Division is doing a reasonably good job. In appraising the job in relation to the demand and need of the present situation and existing conditions, a much better and more effective job is required.

During the present fire season there has occurred a tremendous amount of damage and destruction to properties. The many large fires, mostly man-caused, have exacted a terrific toll in the loss of homes, improvements, timber, watershed, range and other natural resources. There have been lives lost because of negligent or wilful acts. We in the forest and fire protection agencies feel it is only by the grace of God that more lives have not been lost.

How long can we afford to suffer the extreme losses and damage we have experienced during 1959, 1960, and the present fire season of 1961? There have been few, if any, fire protection agencies spared from the onslaught of havoc and devastation that has taken place in their protective jurisdiction. The final chapter in the extent of damage and destruction and loss of life has not yet been written. Flood conditions can easily

duplicate the losses or increase it by many times. We read in the papers that "rains came to parched Southern California" a week ago today. (November 20, 1961) Many people were jubilant, but for others the season's first big rain created chaos and additional damage. Instead of fire it was mud.

Approximately 60-70% of all forest fires are caused by negligence, carelessness, or wilful intent by people in the use of fire or fire-causing agents. The irresponsible few (2,000-3,000) compared with the total population and use create problems for the many.

An increased fire prevention program, complete with the tools and facilities to do the job, is needed. Fire prevention programs involving education, hazard reduction, law enforcement, and related activities must be increased. An awareness of the people of the State to their responsibilities is also essential. The irresponsible person will have to be treated by methods other than education or persuasion if we are to reduce or eliminate the unreasonable loss of lives, property, and resources.

In closing, I would like to thank your Committee for bringing this subject up at this most critical time. Certainly the people of California I think have an awareness today that they did not have even a year ago.

SENATOR COLLIER: Looking at this map and seeing the relationship of the dark green and the light green, the dark green being the Federal lands and the light green being the State lands for protection, what effect is this Wilderness Bill going



to have upon your plans as to the future of taking care of the State lands in preventing fire? Take as an example if we are going to have wilderness areas, the general concept of a wilderness area is where there are no trails, no roads or any way of getting in there, you just wander through. What protection is there going to be if a man-made fire or a natural fire starts and spreads out to the State lands and so forth? Are you correlating this program with this proposed idea in Congress that's gone through the United States Senate, the so-called Wilderness Bill? What effect--have you made any plan as to what your position is going to be in the future in relation to that?

MR. NELSON: There are two points of view on that, Senator. First of all, the proposed wilderness areas are outside of the protection area of the Division of Forestry. They all lie within the National Forest.

SENATOR COLLIER: But if a fire started on an adjoining property and spreads--

MR. NELSON: Then you have that problem. Then the bill specifically as amended and as currently under consideration provides for necessary access for fire protection and disease fighting, but it does not visualize the construction of roads and things of that nature. It is mostly trails. I don't know whether it will permit heliports or things of that sort, but I rather think it will.

SENATOR COLLIER: Then you don't know?

MR. NELSON: That is right.

SENATOR COLLIER: In that bill is there any provision for a study to be made or any work to be done in conjunction with the State? We have a tremendous problem.

MR. NELSON: No, there is not.

SENATOR COLLIER: The only reference to the State in that legislation is that the Governor of the State within which the wilderness areas are proposed is given, I think it is 30 or 60 days to express his point of view. That is the only reference to the State.

SENATOR COLLIER: And the administration has expressed their approval here in California?

MR. NELSON: That is right.

SENATOR COLLIER: Then there has not been any coordination or thought as to coordination between the Federal Government in the State as to protection of State lands as against the wilderness lands?

MR. NELSON: That is right. Most of this wilderness area is pretty well back in.

SENATOR COLLIER: I know. I have one in Siskiyou County and when a fire starts out there and it could rage and go on into Scott Valley easily, which comes under your State land protection--

MR. NELSON: They could run both directions.

SENATOR COLLIER: And therefore there is no way for you to go into Marble Mountain wilderness?

MR. NELSON: Only by hand.

SENATOR COLLIER: Only by hand, a man gets up and walks in?

MR. NELSON: Yes.

SENATOR COLLIER: And just let her burn and let her come down in the valleys and stop her there?

MR. NELSON: You have a wilderness area there with a lot of timber, inflammable area. It is not like some of the high granite country which is fairly fire-proof.

SENATOR COLLIER: Nevertheless, don't you think you are going to have a problem if that bill passes?

MR. NELSON: It is going to constitute another problem, that is right.

CHAIRMAN WILLIAMS: Before we proceed further, I overlooked introducing Senator Charles Brown, the Vice-Chairman of the Committee and also on my far right is Senator Virgil O'Sullivan from Williams, both members of the Committee. Mr. Nelson, did you have a member of the Board of Forestry that you wanted to bring up to the table with you?

MR. NELSON: Yes, Mr. Chairman. I would like to introduce Mr. Paul Aurignac, member of the Board of Forestry. He represents the range and livestock interests on the Board of Forestry. He has to catch a plane this afternoon. He has a short statement he would like to make in regard to the cooperative relationships of the Division and the people in Monterey County. Mr. Aurignac.

SENATOR BROWN: Could I ask Mr. Nelson a question?

We have a great many wilderness areas now at the present time. If a fire starts in the wilderness areas now, does the State help the Federal Government on it?

MR. NELSON: That is a Federal responsibility, Senator. We cooperate by providing men and equipment when they are needed, mostly in places that they are needed within the State boundaries and our relationship on the boundary is one of who can get to the fire first is the guy that gets there.

SENATOR COLLIER: But as it comes out of the wilderness area into your property, into your area--

MR. NELSON: We would be in on it before it got to that point.

CHAIRMAN WILLIAMS: Any other questions of Mr. Nelson?

SENATOR QUICK: I would like to ask a question, please. As I understood, you said the approximate cost of fire fighting in California this year was around 18 million dollars?

MR. NELSON: Support budget, Senator.

SENATOR QUICK: Do you have any figures or will that be brought out later as to what the Federal Government or the county, how much they have spent on fire fighting?

MR. NELSON: The representatives from those organizations are here and I'm sure they will be able to give you that data.

SENATOR QUICK: Thanks.

SENATOR CAMERON: I have a question, but if the

other witness wants to leave, you will be available, Mr. Nelson?

MR. NELSON: I'll be available.

CHAIRMAN WILLIAMS: All right.

MR. NELSON: Mr. Aurignac.

MR. AURIGNAC: Thank you, Mr. Nelson. Mr. Chairman and Members of the Committee, my name is Paul Aurignac. I am a rancher at San Ardo, Monterey County, where I own and operate a grain, cattle and brush land ranch. I am a member of the State Board of Forestry, representing the range and livestock industry. The comments I have to present are pertinent to both wild fires and fires used in range management (controlled burning).

For several years I was Chairman of a group of ranchers and farmers in Monterey County. This group is called Farmers Advisory Committee on Fire Prevention and Control. This group laid down a set of specifications to promote a better relationship between farm and ranch operators and the fire control agencies. (California Division of Forestry, United States Forestry Service and Army). To this we added the Division of Highways, the Southern Pacific Railroad and the Road Department of the County of Monterey.

For the record, Mr. Chairman, I submit this set of rules still in effect today.

As to the efficiency of this program, I can point with pride to the results. In 1943 we had in Monterey County 96 harvester fires; in 1957 we had 3. The number of harvester



fires has since then varied from 3 to 6 yearly versus 96 in 1943.

We, that is the committee and the Division of Forestry, implemented a survey of water locations and their capacity. Road maps ~~are~~ brought up to date as more roads are cut and we inventoried all fire fighting equipment and personnel available within our committees. An inventory of this equipment is hereby submitted. These are rules for our local conditions.

We have, in cooperation with the Southern Pacific Railroad, practically eliminated their right-of-way fires. The Division of Highways has and is fire-proofing those areas where cross winds blow smouldering cigarettes past the shoulders into grass. The State Forester is now negotiating with the Division of Highways for a State-wide program of right-of-way fire proofing.

I believe that points or rules #3, 5, 6 and 8 can be applied anywhere in the State with good results. We can go into those rules if you so wish.

Above all, it behooves the ranchers or at least the committees' chairmen to take the leadership in a continuous campaign of cooperative participation. Too oftentimes there are ranchers that do not seek the cooperation of the Division of Forestry or other agencies in trying to participate or promote a fire prevention program. We believe that should be done. Wherever this leadership is reluctant to come forth, I believe it is the duty of California Division of Forestry personnel to prod it and cause it to assert itself. Certainly, we don't lack leadership in our farming areas. It is simply it doesn't assert itself.

The resulting merger of ideas is a more cohesive fire prevention and control unit.

The California Division of Forestry has a 15 to 18 minute initial attack in our area, but it is normal that when the California Division of Forestry equipment arrives on the scene there is usually from 20 to 50 people and their equipment on the fire line. Yes, we believe in a heavy initial attack (it pays).

I believe that once a wild fire has been put out, the fire fighting agencies and the land owner should develop a program of follow-up range management by: reseeding, debris cleaning, spraying, reburning, etc., so no other wild fire will occur in that area. In other words, full conversion of those lands that are burned should be encouraged. We know for a fact that once you have converted, any fire that occurs in that area can be very well put out much easier and cheaper and without causing much damage.

Many ranchers are participating in a range management program in cooperation with range specialists from both the University of California and California Division of Forestry range specialists. One has only to fly over our foothills and ranges to observe the breaking up of the brush fields. This is an asset to the land owner and to the State as a whole.

We are aware that we have a very small minority of ranchers that would like to spend very little in range management and would like to rely in fire only as a tool of conversion. I am very happy to say that Range Improvement Associations are not among these.. These associations are doing a good job of range management.

I believe that the proper authorities should be empowered to enforce whatever rules are necessary to protect life and property in the suburban and resort areas built in, around and all over our brush fields and forests. Let's protect our brush dwellers from themselves.

Finally, the Pacific Southwest Forest and Range Experiment Station has proved beyond doubt that a converted range (brush to grass) yields 25 to 40% more water than brush field. Less erosion is caused and more productive operation is the result.

Yes, I believe fuel breaks and range management are the answer to reduce our total fire losses and make it possible to contain them into a small acreage.

Thank you.

CHAIRMAN WILLIAMS: Any questions of this witness? Thank you very much. We appreciate having you here and having your testimony. Mr. Nelson, do you have any other gentlemen at the table who wish to speak?

MR. NELSON: Mr. Raymond, State Forester.

SENATOR CAMERON: Last year in just a limited area the county found 19 unauthorized camp grounds where people were just creating a fire hazard and a pollution problem. They went ahead I think and bought chemical toilets at least to try to get it down. I talked with them and it is absolutely impossible to police that effectively. We need almost as many people as campers and picnickers. I am also informed that some of the



areas of the Pacific Gas & Electric, some of their lands a little higher up, where they have lakes and land which they have to protect, it is very important. The evidence of outdoor camping in that was just staggering. You could see little campfires, cans, and some places people even had portable stoves in a place they had no business being. Pacific Gas & Electric has gone into a program of providing areas partly for this reason. Is there any evidence or is there knowledge or opinion concerning the availability of properly constructed camp sites and trails and picknicking spots in relation to fire hazards?

MR. NELSON: There is a definite relationship. Whenever you get people in the wild land area you have a potential of fire fighting and if they are in those type of areas that you described without any preparation or fire-proofing around where they camp, the chances are materially increased. All of the lands with the exception of--we have 70,000 acres of State forest, is all. We provide camping, permit camping and have rudimentary camps for use on our State forests, but all of the other lands under our protection are primarily privately owned so you find that these people are by and large really in trespass on privately owned lands and creating all the hazards and liabilities that go with that type of use. It seems to me the only solution to that is to provide more and more public camp grounds that are properly fire-proofed, properly maintained and operated. In 1958 we figured in the State of California there were over 18 million camper days and in 1960 there were 23-1/2 million visitor days.

SENATOR CAMERON: That didn't take into account the unauthorized ones?

MR. NELSON: That is right. So there is a definite relationship between potential hazard whether it is a camp fire or a flipped cigarette or what it might be, or when you get jeeps running around in some of this wild country in highly flammable vegetation, grass and so forth, low humidity, faulty mufflers are a source of fire. There is very definitely a relationship.

CHAIRMAN WILLIAMS: Any other questions? Now, Mr. Raymond has a statement. Go ahead, Mr. Raymond.

MR. RAYMOND: Mr. Chairman and Members of the Committee, my name is Francis Raymond, State Forester and Chief of the Division of Forestry. I have a prepared statement, Mr. Chairman. I'll not read all of it because it is rather lengthy. We have difficulty in sorting out of the many problems that we have those things which could be reported here today. I wish I could report on all of them. I would like to just briefly mention the program of the Division of Forestry. By law, the State Forester as Chief of the Division is charged with administering these functions under policies established by the State Board of Forestry and under the general supervision of the Director of the Department of Conservation. These functions are as follows:

1. The prevention of and extinguishing of forest fires, which Mr. Nelson pointed out was a large portion of our budget, about 18 million dollars out of our 22-million-dollar budget.
2. The administration of the Forest Practice Act and

enforcement of forest practice rules.

3. The administration of State Forests.

4. Administration of programs providing advisory services to land owners and the conduct of studies and demonstrations in forest management and brush range management.

5. Administration of forest pest control on State forest lands.

6. Administration of a conservation camp program in cooperation with the Department of Corrections and Department of Youth Authority, which was described by Mr. Nelson previously.

I would like to skip over to page 3, Gentlemen, because Mr. Nelson has covered most of this sufficiently for the purpose. The organization of the Division of Forestry is primarily geared to handle the fire protection problems.

The State is divided into a suitable number of administrative districts and on this map which Mr. Nelson pointed out, the lands under protection of the different agencies, you will see a dark line which divides our geographic districts, but not some of the lesser divisions.

SENATOR COLLIER: That is the same down on that little map, isn't it?

MR. RAYMOND: Yes. The basic unit of fire protection operation is the Ranger Unit, consisting primarily of a county or portions of several counties.

The Ranger Unit is divided into several operating sub-units, each under the supervision of an assistant ranger, and

commonly called "Assistant Ranger Districts."

The Assistant Ranger supervises operation of the fire lookouts, forest fire stations (crews and equipment), patrols, communications and fire prevention activities and fire control action within his district.

Six regional districts, under direction of Deputy State Foresters, have been established to provide general supervision and render special services to the Ranger Units in forest fire protection and other functions of the Division.

The six regional district Deputy State Foresters receive their direction from the Chief of the Division.

#### COOPERATION IN FIRE PROTECTION

A basic premise in fire protection in California has been that of cooperation between agencies of the State, the Federal Government, local government and even between the State and private persons. Authorizations for cooperative agreements and mutual aid in fire protection are expressed frequently in the statutes. The wisdom of this legislative policy is obvious.

The structure of any forest fire protection organization cannot be complete in itself nor can it be self-sufficient. It has been recognized for more than a half century that California's high fire hazard and risk makes it necessary that all agencies and persons assume and actively participate in the protection of lives, property and resources from destruction by fire.

The Division of Forestry's fire protection organization is no exception to this rule. A fundamental part of this organization



cannot be shown on the "organization chart". Through informal as well as formal arrangements, each ranger unit has a corps of public agencies, chambers of commerce, "Keep Green" and conservation groups, farm and livestock organizations, timber owners and associations and individual public spirited citizens, all of whom render an untold amount of help in the fire protection operations, both in prevention and the control of forest, brush and range fires. Mr. Aurignac in his presentation pointed out one of these in Monterey County.

In addition to this effort, through mutual aid, most fire protection agencies in California can and do furnish valuable aid to each other in supplying equipment, man-power and services. We need only cite a few of the disastrous fires, such as the Harlow Fire in Mariposa and Madera Counties, the Austrian Gulch Fire in Santa Clara County, the Guerneville Fire in Sonoma County, and the more recent Bel Air and Topanga Canyon Fires in the City and County of Los Angeles, to illustrate this point.

#### DEFINITIONS OF TERMS USED

It is important to define some of the terms with which we are dealing.

The term "Fire Protection" is an all-inclusive one. It includes all things which have to do with protection of lives, property and resources from uncontrolled fires.

The term "Fire Prevention" has two meanings in common usage:

- 1) the prevention of the start (or ignition) of fires

in flammable materials.

2) the prevention of the spread of fire, once started, (such as by an action to extinguish; the prior removal or clearance of flammable material, forming a firebreak immediately adjacent to flammable material in the area of fire risk).

The term "pre-fire suppression" (or "pre-suppression") is that action which can be taken in advance of the start of a fire which will keep the fire to a minimum size as well as minimize the damage from it. This action, extended to plans, operations and management program, includes:

1) The organization of man-power and skills, and inventory of sources from which additional fire control needs can be obtained.

2) Maintenance of equipment and facilities, including necessary detection and communications for extinguishing fires.

3) Facilities to confine fire to predetermined limits, where possible, such as access roads and truck trails, fuel breaks, fire breaks, etc.

4) "Warehousing" and inventories of supplies, equipment, transportation, communications, water sources, etc.

The term "fire suppression" is synonymous with "fire control". It is merely the putting into action of the processes, skills and techniques necessary to extinguish an uncontrolled fire.

#### FOREST FIRE CAUSES

In order to evaluate the problems of fire prevention it

is necessary to examine the record. To give you an insight into the situation faced in regard to the prevention of forest fires, we reproduce here a summary of fire causes on State Responsibility areas for the 5-year period, 1956 to 1960, inclusive, and an incomplete record for 1961 up to October 31.

I won't go down every item here because it would take a considerable length of time. You may have questions about particular items, but I would point out that camp fires, spontaneous combustion, blasting, welding, stationary engine, vehicle exhaust, debris burning for land clearing and range improvement and trash dump incinerators under permit and debris burning where there is no permit issued, sawmill burners, logging slash, smoker-tobacco-matches are particularly important and we feel they can definitely be reduced by more care and by some attention to this particular problem.

On the next page we have the location of origin of fires and I would point out here some of the major points of issue which I think might give an insight into what can be done in the way of pre-suppression planning if you want to put it this way or fire-proofing. On roadsides, for example, you will note roadsides not fire-proofed are considerably higher in number of fires while roadsides which are fire-proofed are far less. The same is involved in railroads which were not fire-proofed and railroads which were fire-proofed. In dumps which were not fire-proofed and dumps which were fire-proofed there shows quite a difference in the figures here.

I think it illustrates rather strongly that fire-proofing is an essential part where there is a high risk. We have also the causal agents by type which I won't go into at this time.

While other jurisdictions, such as fire districts, the U. S. Forest Service and the National Park Service may present a record of a different pattern of fire causes, because of a difference in land ownership or land uses and occupations or, for example, the greater exposure to lightning, the man-caused fire problems are similar.

We would point out several factors as to the origin of fires which our records and observations rather clearly indicate:

Some 75% of the fires controlled by the Division of Forestry are started in various ways by local people, not by visitors, tourists or transient persons.

It is conservatively estimated that between 65% and 75% of all fires controlled by the Division of Forestry could reasonably have been prevented from starting. More than half of these originated as a result of gross negligence, lack of diligence and in violation of law.

There is not time today to go into any great detail about specific causes, however, I would like to observe that most fires are not inevitable occurrences; they can be prevented from happening. We might say that fire causes could be placed into two general classes: "preventable" and "unpreventable". In the "preventable" class are most of the causes listed in the table previously presented. In the generally "unpreventable" class



we can place lightning fires, vehicle accidents, spontaneous combustion, unintentional explosions, etc. Other than lightning, the "unpreventable" classification would represent a relatively small percentage of the total of fire causes.

#### FOREST FIRE PREVENTION PROGRAM

The Division's program in fire prevention covers a broad area of effort. We believe that practically all aspects of the problem are being given attention within the limits of our present capabilities. Whether or not a more effective fire prevention program can be initiated within the present scope of authority and staffing is currently under study by a special task force of Deputy State Foresters. This task force was established last winter when the State Board of Forestry requested that I report to them upon the adequacy of our present fire prevention program and recommend such improvements as appear necessary and desirable. This report will be made to the Board in February, 1962.

I would point out also that a cooperative program of studies, experimentation and research in forest fire prevention has been in progress for some time through the Pacific Southwest Forest and Range Experiment Station. I understand that Dr. Keith Arnold, Director of the Station, will report to you later on this subject.

You may be interested to know that Mr. Lowrey, Chairman of the Assembly Committee on Natural Resources, Planning and Public Works, has asked to be notified of this meeting so that his committee can be present to hear our report and recommendations.

I would like to cover very briefly some of the other points of the program of the State Board of Forestry policy-wise which is set forth herein. I won't read all of the item. One section covers fire prevention education which states that the State Forester can conduct a competent and cooperative program of fire prevention education directed toward all persons within the borders of California and including these items, the laws pertaining to forest fires, the individual responsibilities for prevention of the start or spread of wild fires, the lawful and safe practices in the use of fire and fire-causing agents, recognition of the risks and hazards which create wild fires, the methods and need for reducing physical fire risks and hazards which actuate and permit the start and spread of fires, and a recognition of the value of the natural resources, property, and human life subjected to waste and destruction by wild fires.

They also cover matters concerning fire hazard reduction planning, fire prevention research, law enforcement, and the handling and administration of burning permits.

The scope of the program covers the following subjects, fire prevention education, fire hazard reduction and law enforcement.

#### FOREST FIRE PREVENTION EDUCATIONAL PROGRAM (MASS MEDIA)

Public education as a phase of forest fire prevention was reported in considerable length and detail in the Third Progress Report of the "Assembly Interim Committee on Agriculture", Assemblyman George A. Clarke, Chairman, authorized by House

Resolution No. 49, 1953.

That report covered the activity of Division of Forestry personnel, in news, radio, visual presentations, group and personal contacts, training, burning permits, inspections for law violations, hazard reduction work promoted, etc. It described in detail the accomplishments attained at that time. In scope of work performed, this record is still valid.

The program has continued with the same concept that an informed public is a safer wildland user. The approach is still the same, with some changes in areas of concentration.

The Division has a field aid for fire prevention planning in the form of two reports, executed by field personnel for their administrative units: (1) Fire Cause Analysis Chart (Form FPE-1), and (2) Forest Fire Prevention Action Program Chart (Form FPE-2). These charts show:

- a) Cause by agent, by type of person, and whether local or non-local.
- b) Location by type of person, whether local or non-local, and vegetative cover-type classification of areas involved.
- c) Action by field personnel in all phases of forest fire prevention. The importance of this is that we are able from these analyses, from these reports to concentrate on the kind of fire prevention we are going to give to that particular area concerned, but we are still faced with the enormous problem of making an accurate determination of what and who causes each fire. We have to know what these are if we are going to approach the problem

intelligently. We have to rely heavily on the initial attack forces for the preliminary investigation and report. This dependency on first attack personnel to make an investigation demands specialized training. The personnel usually involved in initial investigations are foremen and very often fire truck drivers. To point out one significant problem, the annual turnover in the forest fire truck driver class, owing to many reasons, is about 33%. It is obvious that adequate training cannot be given to all personnel with such a frequent change of people. So we must obtain more accurate information.

Forest fire prevention education involves to some extent the hazard reduction and law enforcement phases. We will cover these in two parts, the external (mass media) program and the internal (localized) program.

When the Third Progress Report of the Assembly Interim Committee on Agriculture was presented in 1953, problems in wildland management and protection involving the Division were carefully analyzed. Those problems not only exist now but have multiplied in complexity and by addition of others.

The State-wide mass media forest fire prevention campaign is administrated with the same number of personnel today as it was in 1953. A Fire Prevention Coordinator is assigned to the Southern California area and works under the direction of the Deputy State Forester in charge of the District. Another, working in Sacramento under the Deputy State Forester in charge of state-wide fire prevention operations, is responsible for all other areas of the State, including the educational and hazard



reduction programs falling under what will be reported on later as "Internal Program".

These mass media activities have continued to increase, but the potential becomes far greater each year. It must be remembered that forest fire prevention is but one of many vital public service programs competing for free air time on radio and television, screen time in motion picture theaters, specials and features in the press, coordination with advertising layouts, direct mail enclosures, outdoor advertising space, transit advertising space, and all other potentials associated with a mass media campaign. In order to meet the competition there can be no relaxing in maintaining the support of present cooperators, but new cooperators must be developed.

This program was developed and has been maintained in cooperation with the U. S. Forest Service, County Fire Protection Organizations, and the cities of Los Angeles and San Francisco. All State-wide activities are coordinated through the California Fire Prevention Committee, with a present membership of over four hundred of the State's leaders from business, industry, utilities, information services, transportation, labor organizations, military and other governmental agencies. Owing to lack of available time of the two fire prevention coordinators, this membership has not increased materially in recent years.

It is recognized that the impact from television on wild-land users is great. We started almost at its inception in California to provide current and professionally produced motion

picture fire preventional materials for use by the stations. That program continued, but again is highly competitive for public service time. Preparation of materials and station cooperation are illustrations of the time-consuming activities which limits the time for other projects.

There are other programs developed with the California Fire Prevention Committee that are not generally associated with mass media education. As an example, all major railroads are represented on the Committee, usually by the General Manager. They also have representation on the Transportation sub-committee. In 1953, the Western Pacific Railroad Company assigned a field man, representing this committee, to work with all other railroads on fire prevention programs. The major activities have been directed toward rights-of-way hazard reduction, improved spark arresters, personnel training and cooperative understanding and cooperation between area representatives from the railroads and the protection agencies.

In 1954, the Southern Pacific Company and Atchison, Topeka and Santa Fe each assigned a man to work on this program, which still continues. The results as shown by the record are outstanding.

This same type of program has been initiated by the Electric Power Companies, and while the potential is there, only a short period of time has elapsed since it was started.

State and county road hazard reduction programs have been initiated to further intensify the continuing program which has

been operating over a long period of time. We are currently working with the Division of Highways to review and improve the program on State Highways.

We do intend to be on record in favor of further implementing cooperative state-wide campaigns in any way possible and practical. The mass media education is only a part of the answer to forest fire prevention, but certainly it is an important phase in planning and implementing a balanced and effective program.

SENATOR COLLIER: Mr. Chairman, may I ask a question as to this mass media education? What reports do you put out in reference to convictions and so forth, and the second question is what are the penalties under law for conviction of starting fires, and are they severe enough to cause the public to take notice?

MR. RAYMOND: Generally we report to the newspapers individually on various cases which are interesting as far as news items are concerned. From the standpoint of reporting, this is put out in our annual reports only.

SENATOR COLLIER: It gets out as to the convictions and severity of the crimes?

MR. RAYMOND: As to the severity of the crimes, no, sir. Fire law violations are misdemeanors.

SENATOR COLLIER: Misdemeanors.

MR. RAYMOND: Under certain conditions it may be termed arson which is a felony.

SENATOR COLLIER: Those I have seen or taken note

of certainly constitute a felony as to relation to other crimes and they are generally misdemeanors and I wondered if the penalty was severe enough and whether the penalties have gotten out to the public so they would be less careless with these matches and cigarettes and starting fires and the like.

MR. RAYMOND: This is the type of material which is laid out here, which is carried out under--

SENATOR COLLIER: Is there anything in your material that calls attention to the penalty on conviction?

MR. RAYMOND: I doubt if this is emphasized very much. It is mentioned here and there but I doubt very much if it is mentioned very strongly in this type of education.

SENATOR COLLIER: Sometimes I think the law isn't severe enough. People are extremely careless. They burn everyone out and have no money to pay for it or compensate for it. They have no way to restore the forests or watershed and everything else and yet they can go practically Scott-free.

MR. RAYMOND: I'll get to this point in just a minute, Senator.

SENATOR COLLIER: I thought in this mass media of how you were explaining that point.

MR. RAYMOND: I think your point is well taken, Senator, that this could be played upon a great deal more than it has been in the past, although it gets a great deal of play at the time it is going on. It isn't perhaps used enough in daily--



SENATOR COLLIER: Take the Los Angeles fire where those 400-plus homes burned. Whoever started that, if it was man-made, probably gets a misdemeanor on that.

MR. RAYMOND: I wouldn't venture a guess.

SENATOR COLLIER: If he is caught and tried it will be as a misdemeanor.

MR. NELSON: It could be.

MR. RAYMOND: There are problems particularly in regard to investigation of the cause of the fire at the time the fire is going on. Many times we have leads or investigations are being made of individuals which cannot be released to the press at that moment. You may suspect a cause, but you have no proof of it and these kinds of problems, of course, at the time when the most effect could be made, there is very little you can say about it as to the cause. I would like to skip over some of this detail which I would like in the records of your Committee, but I don't think I need to emphasize it here. I think our biggest problem as we point here is the fact that we do not have the type of trained people out on the ground to make investigations or to make proper reports. We have to use the same people that put out the fire to make the report and investigate which many times is very difficult to do. This is a burden when you are trying to put a fire out and at the same time trying to make reports on what is going on. We hope that this can be alleviated in the future. This is one thing we are working on in our fire prevention

planning is to try to develop a system whereby we can have people out there to make investigations while other people are putting the fire out.

I would like to speak.

SENATOR ARNOLD: I have a question. How about cooperation with the local law enforcement agencies? What do you do as far as enlisting them to help in the detection--

MR. RAYMOND: Well, as far as investigations are concerned, we have had excellent help from the Sheriffs' offices and special investigators from the District Attorney's office. However, they can only spend so much time on this kind of program. Of course, they are burdened down with their own operations, day-to-day routine business. They will drop their work and come out and assist us on any of these cases that stump our people or cooperate with us on these larger fires and more difficult situations.

SENATOR COLLIER: Do you folks have special investigators?

MR. RAYMOND: We have a few, yes. We have a fire prevention officer, one fire prevention officer in each district and one or two assistants assigned to him.

SENATOR COLLIER: But a local investigator would be no good. It looks like to me you would bring a man in from the outside and have him check on it.

MR. RAYMOND: We do this, too.

SENATOR COLLIER: You do?

MR. RAYMOND: As we have problems we try to move men around, but considering the fact that we have one or two men to make investigations in a district which consists of sometimes five, six, seven counties, we have lots of fires going by the board while they are investigating another one. There isn't enough to go around at the time when we need them the most.

SENATOR COLLIER: On the other hand they could be working on them and trying to run down the causes.

MR. RAYMOND: This goes on continuously and just because we don't have a man to put on it right now doesn't mean it isn't going to be investigated, but it is important to have somebody there as soon as possible. Did I answer your question?

SENATOR ARNOLD: Yes.

MR. RAYMOND: I would like to discuss a little bit the forest fire hazards. There are problems here which I think need to be discussed.

The question may be asked, "What is a 'fire hazard'? Is it the grass, grain, brush, woodland and forest; the slash from timber operations, the waste from sawmills, the trash and debris deposits and similar materials?"

The answer, from a practical standpoint, is "yes". Any flammable material whether solid, liquid or gas, can be a fire hazard. But such materials, in themselves are not necessarily fire hazards.

What makes them hazardous is what we term, in forest fire protection, the risk. Putting it in another way: the exposure to ignition.

Who would consider (in his right mind) the lighting of a cigarette in a powder factory? Much of our forest and wildland is in the same category.

While some jurisdictions have adopted ordinances declaring what constitutes fire hazards and prescribing regulations therefor, little has been done in California, except in some degree by a few counties, to so establish legal definitions of forest fire hazards and to regulate the hazards and risks involved.

In most cases, the legislature has regulated the risk; for examples, the clearance required around motors, engines, welding torches, etc. (PRC 4155); prohibitions in use of campfires (PRC 4159); prohibition of throwing cigarettes from moving vehicles, (H & S Code 13002), etc. An exception to this is in Pub. Res. Code Section 4165, wherein sawmill waste material is required to be disposed of or cleared around, and any accumulation in violation of the law is declared a public nuisance and is further punishable as a misdemeanor.

Roadside fire hazards. One very serious problem as a source of forest fires is that of public roadsides. The dry grass, intermingled brush, etc., along and close to traveled roadways becomes a hazard because of the risk from the traveling public; burning tobacco thrown from moving or parked vehicles, exhaust sparks from vehicles and similar causes.

The problem is one primarily of removing the flammable material along the roadside or clearing a strip sufficiently



wide to keep a fire from spreading to adjacent lands.

How this problem can be met by the public jurisdictions involved is a question for them to answer. The burden of public expense to clear both sides of all public roads where flammable material exists must be considered but so must also the public expense and private damages which result from these fires.

The Division of Forestry has been working cooperatively with the State Division of Highways and county Boards of Supervisors for many years to get as many miles of the more dangerous roadsides cleared as possible with the limited fund available.

In some cases it has been possible to provide Division fire trucks and crews for standby while these agencies, as well as local landowners, burned the roadsides. This can, however, only be done on a very small segment of the public road system.

I would just like to comment on conflagration control, and this is not in reference to the starting of fires, but more to control of wild fires through the use of conservation camps, developing a system of "fire breaks" and "fuel breaks". The latter is a wide strip of thinned vegetation where the flammable forest or brush fuels are reduced in volume. It usually includes a truck-trail or roadway for fire truck and equipment travel. Through such a network of fuel breaks it is expected that wild fires can be contained more easily within limited areas. These projects are being prosecuted as rapidly as possible but it will be a number of years before substantial progress can be observed on the 35 million acres within the State's area of forest fire

protection. Annual or periodic maintenance of this system is essential and must be seriously considered as part of the program.

Range Improvement and Controlled Burning. Much has been published and said about controlled burning of wildland areas to aid in the prevention and control of wild fires. This subject could well take the full time allotted for today's hearing.

Let me make only a few remarks on the subject here.

Such burning is permitted under law (PRC 4880-4883) for purposes of improving range and forage.

Burning may also be used for other purposes.

The question of controlled burning of areas of vegetation, for whatever purposes, is a matter to be determined by the owner, whether public or private. Private burning is regulated only to the extent necessary for protection to the public welfare. The risk of escape of such "controlled fires is high, because of the season of the year when it can usually be done, the condition of the fuels and the kind of weather which may occur at the time of starting of the fire as well as during its burning.

The results of such burning varies greatly.

Speaking in terms of fire protection benefits, I would point out that such burning can, as part of a continuing land management program, reduce the volume of live vegetation as well as dead vegetation and fuels, thus making it easier to control wild fires which may start there or in adjacent areas.

On the other hand, the starting of wild fires in such burned areas can be a greater potential because of the grasses and other "flash fuel" materials not previously prevalent.

Merely running a fire through heavy brush and woodland usually creates both a greater wild fire hazard and a more difficult fire control problem in the future because of the additional dead and dying vegetation not consumed in the controlled fire.

In the past 15 years 6,000 permits have been issued to brush-range land owners who have control-burned between 1-1/2 and 2 million acres.

This operation is continually under scrutiny of the State Board of Forestry, which maintains as a consulting group a Range Improvement Advisory Committee consisting of about 30 persons representing all interested public agencies and the University of California Agricultural Experiment Station, livestock and farm groups and the timber industry.

I would like to comment just briefly about the Forest Practice Act and rules relating to fire prevention.

The Forest Practice Act (Pub. Res. Code Chapter 10, Division 4) does not, in itself, prescribe forest fire prevention regulations. It does, however, authorize the promulgation of forest fire prevention rules by the District Forest Practice Committees and adoption by the Board of Forestry.

Penalty for infraction of rules is suspension or revocation of the timber operator's permit to conduct timber harvesting.

Each of the four forest district regulations contain rules pertaining to fire prevention. These relate to such things as:

1. Filing annually of a fire control plan with the State Forester.
2. Keeping logging truck roads open for fire truck access.
3. Smoking.
4. Use of warming fires.
5. Inspection of logging areas for fires.
6. Removal of snags.
7. Firebreaks in the logging area.
8. Abatement of slash fire hazard.

At the close of 1960 there were 1600 active timber operator permits in the state.

The average number of inspections of timber operations made by Division personnel is 2735 annually, (2496 in 1960.) In 1960, of 1,839 infractions of rules found, 40% were for failure to file a fire control plan and failure to dispose of snags.

The administrative procedures required under the Act to obtain compliance with rules is comparatively slow. An absolute minimum of 13 weeks is required to process a case from time of filing to adjudication. But this takes into account no delays at any point of the process. Personnel time consumed in the process is of real concern. A recent case required 200 man



days of effort, not including the time put in by the Attorney General's office and Hearing Officer. The processing time for litigation can be crucial as far as fire prevention rules are concerned. Infractions committed during the early part of the fire season can continue during an entire summer before remedied, if remedy is possible.

Fortunately, the majority of timber operators are responsible people and respond quickly to correction of infractions brought to their attention. It is a minority against whom it is necessary to bring litigation to obtain compliance.

Most of the substantial timber operators, particularly those who own and manage timberland, maintain a fire prevention program of their own, with ground and aerial patrols, water tank trucks and fire trucks, fire weather observations, shut-down of operations during critical fire weather and other similar activities.

#### FIRE LAW ENFORCEMENT

Prior to 1943 fire law enforcement was pretty much of a "catch-as-catch-can" proposition. State Forest Rangers did the best they could to report fire law violations to the District Attorneys and to the courts. Considering that these officers were not trained in law enforcement work, the results were generally good. The volume of business was not overwhelming either, except in certain areas. Some assistance from two or three law enforcement specialists working out of the State Forester's headquarters was available as time permitted.

In 1943, when regional districts were established, a fire prevention (or fire law enforcement) officer was attached to each of the six District Deputy State Foresters' staff. No law enforcement staff was included at the State Forester's headquarters at that time.

In 1946 a separate function covering fire prevention activities was set up in the headquarters office. This function, however, was primarily geared to information and education in fire prevention, including the "mass-media" previously described.

Nevertheless, at that time the State Forester issued instructions as to the manner in which all of the functions of fire prevention should operate, including fire law enforcement.

The State Board of Forestry at that time believed (and this was concurred in by legislative committees; as witness several committee reports), that the emphasis should first be placed upon the educational features - films, posters and other mass media, and personal contact - to educate the people of the State in the natural resource values and how fires could be prevented; that law enforcement should be a secondary remedy when and where the "education-information" program fails.

This promise is still valid, in our opinion.

However, the then-expressed "policy" was interpreted to mean a minimum effort by field personnel in fire law enforcement and this is what resulted.

As a result of studies of fire problems in 1955 and 1956, the Director of the Department, the Board of Forestry and

the State Forester all agreed that twelve years of effort in "fire prevention education", conducted on an unprecedented scale was not reaching a substantial segment of the population. It was determined that more emphasis must be placed upon the law enforcement function. As a result of this the problem was taken to the legislature and a modest plan of implementing law enforcement positions was agreed upon.. This plan was activated in 1957 at three levels - to the State Forester's staff was added a law enforcement specialist (Law Enforcement Coordinator) to give State-wide leadership and direction; to the regional districts fire prevention office staff was added an assistant fire prevention officer; and to the ranger unit there was added one or more "fire prevention patrolmen", in accordance with the particular work load.

Following this action in 1957, one additional position of Fire Prevention Officer to assist the Law Enforcement Coordinator was added in the 1960 budget.

The following chart showing the number of fire law cases processed for the nine-year period 1952 to 1960, will give some idea of the progress being made.

SENATOR COLLIER: Have you a chart as to what was done in these criminal cases?

MR. RAYMOND: Yes, we have. That is coming up. It will be on the next page. You can see that from 1952 through 1956, there was pretty much the same general load, and also 1957. From 1958 through 1960, they practically doubled.

The criminal cases are handled by field officers through the local District Attorneys and courts. Civil cases are screened and processed through the State Forester's office and referred for handling to the Attorney General's office.

For work load I would like to refer to the chart on prosecution of fire loss cases in criminal actions shown for the period 1958, 1959 and 1960 and an incomplete report for 1961. You will note that those initiated in the criminal action by the field in 1958 numbered 245; 1959, 214; and 1960 was 306. To date we have 250 in 1961. Those dismissed or dropped after review by the District Attorney were 19 in 1958, 22 in 1959 and 33 in 1960 and 41 in 1961. Those prosecuted were 226 in 1958; 192 in 1959; and 273 in 1960, and 209 in 1961.

Convictions obtained were 203 in 1958; 163 in 1959; and 209 in 1960, and 180 in 1961.

In regard to the civil actions to recover the State's cost of fire suppression and damages there were 366 in 1958, 603 in 1959 and 684 in 1960. Now, after review of these with the Attorney General's office as to evidence and so forth, 299 were dropped in 1958; 390 in 1959; and 567 in 1960.

SENATOR COLLIER: What does that indicate, that the education wasn't good?

MR. RAYMOND: This indicates to me that we need some more specially trained investigators in the field to review these cases because we don't have sufficient.

SENATOR COLLIER: Out of 684 initiated the Attorney



General reviewed and dropped 567 leaving you 117 which is a small percentage.

SENATOR CAMERON: Is there anyone from the Attorney General's office here on this?

MR. FORD: Not unless they are just sitting in.

SENATOR CAMERON: Sometimes in lawsuits to recover the cost of fire suppression, you have a good lawsuit but if the man is bankrupt, it is not worthwhile to spend the money to get a civil judgment. I wonder if this is involved in this.

MR. RAYMOND: To some extent, although these are pretty well screened out before they get to the Attorney General's office in regard to this. If it is a substantial amount we may refer it to the Attorney General's office.

SENATOR CAMERON: Could we have the Attorney General's office give us in writing an explanation of the background on this?

SENATOR COLLIER: Yes, but on the other hand don't you think we better amend the law if they can't pay the penalty and let them sit in jail a while?

CHAIRMAN WILLIAMS: It looks as though the District Attorneys in the counties were pursuing these cases a little more diligently than the Attorney General's office.

SENATOR COLLIER: Let these fellows sit in jail a few weeks and maybe they will find a way to pay these bills.

CHAIRMAN WILLIAMS: Put them on the fire line.

SENATOR COLLIER: And go out and fight fire a few days. This thing of negligence of people with fire in California

has to be halted some way and if it is going to take stiff penalties and severe prosecution, why something has to be done about it because we are getting too many people out in the wilderness areas and the range lands and brush lands, and just like Senator Cameron pointed out, we have people picnicking in places they shouldn't be and the State is losing too much of its natural resources through carelessness and it not only hurts the local area but it hurts the whole State and the nation. I think these people should be severely dealt with. They don't think anything of burning people's homes and meanwhile they go off Scott-free because they are unable to pay the bill or because we are unable to prove it on them or bring them to law and it looks like there is some negligence on the State's part, whether it is in your field work or in the Attorney General's office, I'm not prepared to say and I think we ought to find out.

MR. RAYMOND: Well, this is a very complex problem, Senator. Every single case is a real problem.

SENATOR COLLIER: We heard them the last session and the session before talking about narcotics. This thing of burning up people's property and burning up people is just as severe and more severe than the narcotics problem. It is just as damaging to the economy of the people of the State as the narcotics field. Certainly it isn't as sensational a thing as the narcotic thing where the television and the press go off and ask for these extremely severe penalties while this thing is going on burning up everyone's property. Maybe in the metropolitan

areas they will wake up and find out with this last fire in Los Angeles that they, too, have a tremendous problem and can be burned out of homes with people killed, and I think it is high time we do something about it and make these penalties extremely severe. If they can't pay the bill, let them sit in jail.

SENATOR O'SULLIVAN: Mr. Raymond, I have been looking through the statements here and it seems to me that the heaviest areas for fire as to causal agent lies with the local person using matches or cigarettes in wild land and usually adjacent to a road or a railroad, isn't that about it? Can you describe what is a typical fire cause? If you had to put those factors together, could you do it in a sentence?

MR. RAYMOND: I think you have already done it, Senator, if you want to pick the typical situation. I don't think, though, that we can rely on the typical situation entirely because we have other factors involved here. I mean, for instance, your local person is one of the factors here. The major number of fires are caused by local people, but some of the things are not merely by throwing out a cigarette or dropping a match, but for example throwing out hot ashes in the grass, dumping these and going off and leaving them, setting on fire a pile of rubbish and going off and leaving it, burning next to a wild land area, this sort of thing. These are things that are not accidental. They do these things on purpose, not to set a wild fire,

but their act is deliberate.

SENATOR O'SULLIVAN: I want to ask you about wild lands. What is included in wild lands, forest and brush or what?

MR. RAYMOND: It is a general term including the non-cultivated land.

SENATOR O'SULLIVAN: It would include range land privately owned and publicly owned?

MR. RAYMOND: All types of lands whether private or public.

SENATOR O'SULLIVAN: I was just trying to think, do you have a program that you have aimed at this composite cause?

MR. RAYMOND: We have aimed primarily our mass media education towards this.

SENATOR O'SULLIVAN: I know that you have.

MR. RAYMOND: Educating people about this, but the law enforcement end of it has been neglected.

SENATOR O'SULLIVAN: Do you have any recommendations in the field of law or any criminal statutes which would reach this composite cause? I mean, I looked through all your reports so far and I haven't found any and I wondered if you had any in mind.

MR. RAYMOND: I cited only a few suggestions. This is something, of course, that you can argue about for a long time as to what effect and then on top of the personal opinion, the matter of law. I mean, how can you enforce certain



kinds of things?

SENATOR O'SULLIVAN: In this matter of enforcement, would you recommend any change in local enforcement?

MR. RAYMOND: I think we can improve considerably the local enforcement by better investigations and if we have available the trained people to make the investigation.

SENATOR O'SULLIVAN: Inherent in your statement here is a statement that there are not at the level of local government trained personnel sufficiently supervised to accomplish this purpose, to eliminate this composite cause. Is that right?

MR. RAYMOND: We don't have enough field people assigned to this particular work and trained in it to be as effective as we should be. We are using truck drivers and foremen out here until maybe two or three days later when a fire prevention officer, one of the investigators can be broken loose and sent there.

SENATOR O'SULLIVAN: Should these enforcement officers be under local government as it exists under the Board of Supervisors or should they be under in your opinion your Division or Department?

MR. RAYMOND: Well, it is my belief that these should be under our direction.

SENATOR O'SULLIVAN: All right. Now, I notice in the reports that I have read here that the administrative procedures under which you are now proceeding are too cumbersome. Is that a pretty good statement of it, too slow?

MR. RAYMOND: I made this remark in regard to forest practice rules because the remedy here, the enforcement procedures are administrative and they are complicated. They are time-consuming and there are delays; in other words, time for compliance and this sort of thing.

SENATOR O'SULLIVAN: Do you think they should be civil or criminal?

MR. RAYMOND: I think some of them might well be added as criminal in some respects. Now, which of these should be, I wouldn't want to say at this point. In other words, there are things which need to be taken care of right now, not some time two or three months hence.

SENATOR O'SULLIVAN: I notice if you wanted to include another factor in this composite picture of a typical fire you would have to include children as a causal agent. Do you have any recommendations as to what could be done in this area as far as this point is concerned?

SENATOR COLLIER: Put the parents in jail.

MR. RAYMOND: This is a real problem, the damages done by children playing with matches and so forth. The parents many times are to blame. I feel that they are anyway. Of course, sometimes I guess they can be excused. Johnny gets matches from the neighbors some time in playing with the neighbor's boy.

SENATOR O'SULLIVAN: Do you think you ought to make the parents responsible criminally for this act?

MR. NELSON: That has been done in some of this

vandalism, hasn't it, Senator?

SENATOR O'SULLIVAN: I don't know. Don't answer my question with a question. I am just here getting information. I just wonder what you think about it.

MR. RAYMOND: I don't know whether this is as effective on a criminal basis as it is on a strong civil basis, Senator. I think more responsibility on the civil basis can be just as effective and moreso than criminal actions in some cases.

SENATOR O'SULLIVAN: You already have the remedy today, make them a ward of the Juvenile Court. A child is criminally responsible for their acts to some extent the same as an adult.

MR. RAYMOND: We do find some, Senator, that are repeaters and then we are able to act on these most generally, but getting the proper treatment of this is another question.

SENATOR O'SULLIVAN: In regard to roadsides again, there are two fields, the State highways and then there is the county, isn't there?

MR. RAYMOND: Right.

SENATOR O'SULLIVAN: And then there are private roads. Have you had the cooperation that you feel that you ought to have from the Division of Highways in regard to fire suppression adjacent to the highways?

MR. RAYMOND: I believe there are many problems which the highways have not corrected. I think their sympathies are with it, but the amount of money they can appropriate for

this purpose is limited by law. As far as their maintenance is concerned--

SENATOR O'SULLIVAN: Their attitude has been good but their production has been poor?

MR. RAYMOND: Well, I wouldn't say the production has been poor. I think where we have worked with them or where we put the pressure on them for a particular problem, they have met these fairly well. They haven't met them all over, however.

SENATOR O'SULLIVAN: How about the counties in the State?

MR. RAYMOND: Well, this varies considerably by county as to the amount of effort and money that the counties will put into this. Some counties are pretty poor both as far as money and effort are concerned. Some are rich otherwise but don't put in much effort or interest.

SENATOR O'SULLIVAN: So that is just so-so as far as the county is concerned?

MR. RAYMOND: This varies from county to county. Many of them are very good. They will clean up along most of their hazardous roadsides.

SENATOR O'SULLIVAN: How about the railroads?

MR. RAYMOND: The railroads are cooperating very well.

SENATOR O'SULLIVAN: That's all.

CHAIRMAN WILLIAMS: We are going to have to recess now. Have you a short question?



SENATOR CAMERON: No.

CHAIRMAN WILLIAMS: We are going to recess until the hour of 1:30, P.M.

(Thereupon the noon recess was taken.)

Monday, November 27, 1961, 1:30 O'clock, P.M.

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CHAIRMAN WILLIAMS: The Committee will be in order, please. A member has just been added to the Committee, Senator John Begovich from Placerville, on my extreme right. We are glad to have him. Now, Mr. Raymond, will you proceed with the balance of your statement. Others will be coming in shortly. Rather than hold you up, I wanted to go ahead and proceed here.

MR. RAYMOND: Mr. Chairman, I had concluded with the prosecution of our fire law cases. I would like to make a few comments on some of the arson and incendiarism. Of great concern in the increase in felony violations by incendiary fires. The five-year average of incendiary fires for the period 1956 to 1960 was 11.8% of all man-caused fires. These fires burned 32% of the acreage for that period.

In 1961, and this was to November 21, the 76 major forest fires, and we classify major those over 300 acres, 27 or 36% were of incendiary origin. These burned 125,000 acres, 48% of the total 258,000 acres burned by the 76 fires. Four people were burned to death in these incendiary fires, which caused more than 3 million dollars in property damages, not including any estimated watershed damage.

Cooperation in fire investigations--we have obtained excellent cooperation from the Sheriffs of the various counties and the District Attorneys' staffs. We cannot expect to receive help from them in all fire cases. Their offices are already

burdened with a heavy load. The fact that these county officials have given much of their time to the incendiary problems encountered in 1961 accounts for what success we have had in tracking down a number of suspects against whom charges have been filed, and they continue to work with us on other cases.

Other agencies such as the highway patrol, the State Division of Highways, the State Disaster Office, county road departments and many others have likewise extended their full cooperation.

#### FIRE LAWS

Our present fire laws are little different than those which were enacted in the period 1903 to 1909 and in 1919. Many of these were codified in 1939 into the Public Resources Code, some into the Health and Safety Code, Penal Code and even others. As time progressed, minor but seldom really substantive amendments were adopted by the Legislature. These were perhaps adequate for that time. We doubt their adequacy for today's needs.

We would take, for example, the laws requiring permits for burning, blasting and fireworks. These appear in three separate statutes (Pub. Res. Code Sections 4151, 4153, 4159).

These statutes are not only scattered but also fail to provide even the basic elements of standards upon which to deny or grant the permits or to establish restrictions and terms which will more adequately insure against escape of the burning to the property of others.

The matter of closure of lands to entry and use during hazardous periods is very confused in the statutes. We refer to Sections 4126.5, 4128, Pub. Res. Code and Sec. 602, Penal Code.

The regulation of sawmill waste disposal is covered by Pub. Res. Code Section 4165, but trash and garbage dumps, equally as dangerous (if not more so) are completely unregulated.

Another matter of concern is the inadequacy of the present spark arrestor law (Section 4167, Pub. Res. Code) which fails to define what constitutes an "effective device or spark arrester".

While employees of the Division of Forestry may enter upon private property to suppress an uncontrolled fire (as a public nuisance; Section 4164, Pub. Res. Code), no authority specifically exists to enter the property for purposes of investigating the cause or circumstances surrounding the origin of a fire not necessarily involving a crime.

It would be very desirable for the legislature to establish a specific declaration of policy regarding uncontrolled fire and the regulation of use of fire.

One of the more aggravating problems is that of build-up of structures and occupancy in wildland areas where fire hazardous vegetation is allowed to exist close to the structures. Experience in recent years is showing more and more fire losses of structures and property and threat to human life. Our fire fighting equipment and crews are rapidly drained into protection of structures thus, in many cases, leaving the perimeter of the



fire to continue on and threatening other similar properties. It has been our experience that where structures are more adequately cleared around they can usually be saved. Some counties have ordinances regulating clearance around buildings but the requirements are extremely different and in many cases completely inadequate. We would suggest that this problem be studied as to the merit of a minimum legislative standard.

We have not attempted here to set forth all of the statutory problems but only to recite a few examples. We believe this matter is worthy of further study and action. Our office has been diligently working on this problem and we would be pleased to submit a recommendation if it is the pleasure of the Committee.

#### CONCLUSION

In the report of the Legislative Auditor to the Legislature in 1957-1958, Page 606, speaking of the function of forest fire prevention, it was said:

"This function (Budget page 748) is responsible for the preparation and dissemination to the public of fire prevention, informational and educational literature, slides and films through the various media of radio, television, press and personal appearances. It also constitutes the law enforcement tool of the division to insure compliance with regulations prescribed by the Legislature and the Board of Forestry, and to investigate, assign responsibility and follow through on litigation commensurate therewith. This is one function which we feel could produce

considerable effect on the ultimate needs of the division's suppression machinery if sufficiently expanded and properly implemented.

"However valuable fire prevention education can be, there are still some individuals who cannot be impressed with this approach, those being the grossly careless and the incendiaries. The State Forester has indicated that little is being accomplished which could and should be, to assign responsibility for carelessness and intentional setting of fires, and to insure prosecution. We feel that both phases of fire prevention should be exercised to the maximum, each being as important to gain its particular end as the other. We recommend that favorable action be tendered this function, for it is our contention that maximum exploitation of fire prevention coupled with maximum training of employees to use proven tactics and equipment, will not only reduce fire occurrences and acreage burned but also will afford an accurate evaluation of the division's suppression needs."

Over the past years, and necessarily so, the immediate need for the preservation of forest and wild land resources in California has been the immediate suppression of forest fires.

As a consequence, the Division of Forestry developed its fire suppression activity to cope with this immediate pressing need. Budgetary appropriations have provided for fire suppression operations but it has been almost impossible to establish an adequate force to develop an organized fire law enforcement operation for forest fire prevention.

It is now apparent that if any appreciable effect on fire prevention is to be gained, there must be a sufficient number of law enforcement positions, complemented with trained personnel, as will be able to deal with the over-all volume of fire law enforcement work to be done.

We are now fighting forest fires because man cannot see that he has a responsibility to exercise care and to obey laws. The important task ahead is the intelligent use of the law to inspire fire prevention incentive.

The tragedy of forest fires today is both man-made and preventable. It is a human crisis due to the failure of human beings to realize their responsibilities. The causes of this crisis are fundamental; for the cure we must turn to the fundamental. In order to evolutionize individual apathy toward forest fire prevention to one of responsibility we must inspire forest fire prevention incentive. And here is where the need for enforcement of fire prevention laws is a necessity. And no less is the need for fire law enforcement officers trained in this concept.

The question of forest fire prevention is a crucial one for the future economy of California.

Thank you for the opportunity to express these views.

CHAIRMAN WILLIAMS: Any questions of Mr. Raymond?

SENATOR CAMERON: I have a few.

CHAIRMAN WILLIAMS: Go ahead, Senator.

SENATOR CAMERON: In relation to certain legislative

action that may be needed, you mentioned I believe that there is a burning and blasting and fireworks permit. You issue those now, is that right?

MR. RAYMOND: We issue permits now.

SENATOR CAMERON: Do you have power to establish an administrative code in that area, or just on statutory grounds?

MR. RAYMOND: It is purely on a statutory ground. We discussed this with the Attorney General's office some years back and we found no authority to make administrative regulations in this field. However, the matter is one of permission because it is a permit. There is permission granted and there are certain terms involved here which require compliance with the laws and certain features which would indicate necessary care under particular conditions.

SENATOR CAMERON: In relation to legislation in that area if it was considered, do you think perhaps rather than to try to put it into law that since there are a lot of factors involved in changing conditions, that the power to establish administrative regulations might be better or would you prefer statutory provisions?

MR. RAYMOND: It may be desirable to authorize the establishment of administrative regulations, but I believe that there are some areas in which the Legislature might set the standards for such regulations.

SENATOR CAMERON: I think we would have to make them general anyway.



MR. RAYMOND: Yes, because there are so many complex situations for each permit.

SENATOR CAMERON: You mentioned trash and garbage dumps. Are these quite a problem?

MR. RAYMOND: Rather a serious problem, yes. Of course, the county Boards of Supervisors are coping with the public dumps. Many of them have had dumps in which they burned regularly. It is very difficult now to establish a dump where they are going to put in a subdivision or where there are people living and they search all over the back country trying to find a place for a dump and, of course, everybody complains about that, not wanting one in their own back yard.

SENATOR CAMERON: The land fill doesn't give you any problem?

MR. RAYMOND: They are going more to the land fill type of dump. Now, this isn't progressing very fast and this doesn't take care of the many private dumping grounds around, some of them unauthorized.

CHAIRMAN WILLIAMS: You mean besides the roads?

MR. RAYMOND: The roads and just off the roads on somebody's private property. This sort of thing, of course, is difficult to regulate.

SENATOR CAMERON: Do you think that should be under administrative or under general statutory form?

MR. RAYMOND: I think it would be under legislative standards. Now, where the Legislature sets a standard, at least

a minimum standard, then it is a base on which the local governments may set higher standards under ordinances.

CHAIRMAN WILLIAMS: Let me ask a question while you are looking up some more. Mr. Raymond, does the United States Forest Service have the same problem that you have, and I'm referring to your statement there regarding fire laws. I think it starts on page 30 where it says, "While employees of the Division of Forestry may enter upon private property to suppress an uncontrolled fire," but can't get on the land to investigate the cause. Does the United States Forest Service have the same problem?

MR. RAYMOND: The United States Forest Service in administering the laws do so as fire wardens appointed by the State Forester, not in the administration of Federal regulations or Federal laws in that case on private property.

CHAIRMAN WILLIAMS: Well, this has been in existence for a long time, this situation. Hasn't there ever been any attempt to get through legislation? Didn't they have these things, trash dumps and garbage dumps?

MR. RAYMOND: Oh, yes, they had them, Senator, but they never got down to wrestling with them. They have been talked about many times. We have reported upon them, on the particular problems. However, they have never concentrated on doing anything about this.

CHAIRMAN WILLIAMS: Now, you have more people in the forest than you ever had before.

MR. RAYMOND: That is correct. And we are seeing the results of these fires, these wild fires. As demonstrated by the amount of improvement damage, they are getting intolerable because of the added buildup of cabins and buildings and so forth throughout the wild land areas.

CHAIRMAN WILLIAMS: Go ahead, Senator. I didn't mean to interrupt your trend of thought.

SENATOR CAMERON: In relation to the authority to enter property to determine cause, the employees of the Division cannot, and Forestry may not do this. Do I understand that a fire warden, State fire warden could or not? I don't know.

MR. RAYMOND: Well, this is the point, Senator, that while we have specific authority to enter private property to suppress fire as a public nuisance, once the fire is suppressed or put out and two or three weeks later or a month later or several months later we may want to send men back in to investigate and to enter the land, we don't believe that this should be left to the discretion of the property owner to say that we should stay out.

SENATOR CAMERON: Can anybody else go on it, I mean is there--

MR. RAYMOND: I don't think there is any specific authority. I'm not certain on that point whether other authorities like the sheriff or somebody else might, and of course we can still go to the courts to remedy this.

SENATOR CAMERON: I think roughly you say that arson, actual intentional setting of fires accounted for about

half of the acreage of the major fires in California.

MR. RAYMOND: That is right. They were set at a time and place under conditions in which they will burn the most acreage.

SENATOR CAMERON: Are most of these set in areas where it is hard to control? Is this what is happening?

MR. RAYMOND: This in a sense, yes, what happens.

SENATOR CAMERON: Do you know or will somebody else be here to testify as to what we are dealing with, whether it is pyromaniacs or nuts or are we dealing with people who do think they have an economic interest in it?

MR. RAYMOND: Well, we classify these situations in two categories. There are the arsonists you might say that are properly called incendiaryists who deliberately go out to set a fire to do damage to be a nuisance, and there are a lot of crackpots, nuts you might say, half-wits and other problem people of this nature that set that kind of fires. The other type of fire is one that is usually classed where there is someone who has set a fire for the purpose of his own beneficial use which is more or less classed as incendiary because it is an illegal act to do this. We usually class this in the type of people who are setting the fire without burning permits. We have classed them in that category not as an incendiaryist or arsonist but burning without permits. On occasion there are some who set a fire for their own benefit.

SENATOR CAMERON: If you took a house, a guy finds



he wants to collect insurance and he sets fire to his house, he is an arsonist, but the one who goes around and sets the fire because he may get a sexual thrill or some other thrill out of it, he is an arsonist, too, but for a different reason. Have you any approximate idea of what, or rather maybe I misunderstood. What about the guy that set this for collection of insurance or for--you remember during the depression when they used to be set so they would get a job fighting fire. Are they classified under arsonists here or do you put them somewhere else?

MR. RAYMOND: They would be generally classified under this class, under the arson group. I mean they are different from some of these other people as you point out, but they are still arsonists.

SENATOR CAMERON: The one who does it thinking he is going to make a profit from it and the one who does it because he has something wrong with his brain or mind.

MR. RAYMOND: Just how many I might classify in each one, I don't know. We find where there are large numbers of fires set at a time or during a short period of time many of these fires originate from the same person or perhaps one or two at the same time but we may find one man may have set many of these fires from way back that they didn't know the causes at the time. We knew they were set, but we didn't know who, and of course we find these people confessing sometimes to setting certain fires. Now, whether this is true or not also has to be checked because

sometimes they like to brag a little.

CHAIRMAN WILLIAMS: Any other questions?

SENATOR QUICK: I have a question, please.

CHAIRMAN WILLIAMS: Senator Quick and then Senator Arnold.

SENATOR QUICK: You spoke about this powder keg deal along the highways or away from the highways with reference to right-of-ways. Do I understand what you mean by that is if we have the right-of-way for the Federal highways or State highways and so forth that that is in favor of fire fighters and so forth?

MR. RAYMOND: Where the sides are improved or cleaned up more?

SENATOR QUICK: Yes.

MR. RAYMOND: Oh, yes, definitely. We find that the freeways, for example, are more or less a fire hazard, fire risk from that source than the old-type highway of which we have many miles yet.

SENATOR QUICK: You have talked at length about more stringent laws for these people. I'm wondering if that would discourage people from going into these parks for whom they are really intended? Do you think these stringent laws are going to discourage people? Are we going to find ourselves with a lot of parks and nobody daring to go into them for fear they might get into trouble?

MR. RAYMOND: I don't think so, Senator. We find

particularly around improved areas we are not having too much trouble from this source.

SENATOR QUICK: What do you mean "improved areas"?

MR. RAYMOND: Improved campgrounds and these recreation areas where people are used to going. While in some areas the risk and hazard is great, these people are generally pretty careful compared to the total number using the areas.

SENATOR QUICK: But you speak of a certain class of people who cause these fires and so forth. Would you be opposed to--I'll put it this way. Do you think it cheaper to prevent fires than fight fires?

MR. RAYMOND: Very definitely. There's no question about it. It is much cheaper to prevent fires than it is to put them out.

SENATOR QUICK: But I gather from your statement you are somewhat opposed to controlled fire prevention?

MR. RAYMOND: No, not at all. Do you mean as far as removal of hazard and this sort of thing?

SENATOR QUICK: Yes.

MR. RAYMOND: No, I'm saying we should have more of this sort of thing, but it shouldn't--we can't say this is the whole thing that we should do. This is only part of the problem.

SENATOR QUICK: What is your reaction with reference to controlled burning of fires, that is, to prevent fires?

MR. RAYMOND: Well, control burning is fine for

land management operation and as far as the control of fires generally, if it is practiced properly where you remove the heavy vegetation, the dead vegetation that is in it and really manage it, it is useful, but if it is not, then you have for the future a great deal of hazardous material that remains and makes it most difficult to control fires under those conditions.

SENATOR QUICK: But if they burned out wide enough strips, wouldn't it make it easier to prevent the spread of fires if they should start in a particular area?

MR. RAYMOND: Oh, yes, we would like to see more roadsides of all kinds cleaned up. Not only that, but part of our conservation camp operation is to clean up along public roads, that is off the highway right-of-way, we get rights-of-way and clean up in some areas.

SENATOR QUICK: And make them wide enough?

MR. RAYMOND: Make them wide enough to be more effective. We also thin out vegetation so that when a wild fire does start we have some place we can work from where the fire is not so likely to spot across.

SENATOR QUICK: Do you know how much it costs, what they pay for this convict labor, if I may use the expression, to suppress fires and so forth?

MR. RAYMOND: Well, the inmates of the camps cost the State as far as the camp operation is concerned, that is as far as the work day per man is concerned, \$3.50 a day approximately.

SENATOR QUICK: Who pays that? Does one department



pay the other? Is there a transfer of funds?

MR. RAYMOND: This amount is appropriated to the Division of Forestry and then is transferred to the Department of Corrections or the Youth Authority according to the number of days we use them.

SENATOR QUICK: Does that mean the people who are inmates are earning the salary of \$3.50 per day on those days?

MR. RAYMOND: No, they get approximately 50¢ a day.

SENATOR QUICK: Where does the rest of the money go?

MR. RAYMOND: For the cost of maintaining the men in the camps.

SENATOR QUICK: I asked the question before. It cost the State of California last year approximately 18 million dollars a year to fight fires. Do you have any idea what it cost the Federal government and the county set-up we have?

MR. RAYMOND: You are speaking of control on Federal lands?

SENATOR QUICK: Control of fires in California last year.

MR. RAYMOND: No, there are representatives from the United States Forest Service here that can tell you that better than I can. The matter of how much the counties appropriated for this purpose in fire districts is an unknown quantity pretty much. In about 29 of the counties which contract with the State for providing fire protection, the work that we performed for them, amounts to about 3 million dollars, I believe. Maybe it is over

3 million dollars. This is in 29 of the counties. Now, there are counties like Los Angeles and Santa Barbara, Ventura and others that maintain their own fire protection organizations, and I don't know what their budgets are for this work.

SENATOR QUICK: Thank you.

CHAIRMAN WILLIAMS: Senator Cameron.

SENATOR CAMERON: I just preface my remark, regardless of what we do on education or enforcement, we are always going to have fires either from lightning or non-man-made and we are not going to completely lick the incendiary problem or the careless person completely. In your own plans, it is true, isn't it that you could use to keep the fires from spreading a lot more access roads?

MR. RAYMOND: Yes, sir.

SENATOR CAMERON: And you could use a lot more fire breaks, could you not?

MR. RAYMOND: Yes.

SENATOR CAMERON: And fuel breaks?

MR. RAMOND: Yes.

SENATOR CAMERON: Part of the problem as I understand in the fire break, at least in the Forest Hill area, is that if you clear a fire break and don't go back in in three years you have a worse hazard there than you had in the beginning because the brush grows up faster.

MR. RAYMOND: This is part of the problem and I mentioned this in my report that this is a costly proposition,

but we can't afford to just go out here and build these and then go off and forget them. They have to be maintained on an annual basis or periodically and this is costly. Now, in setting up our camp programs, the location of our conservation camps, we have laid out the work for these camps for a long time to come and in considering this we considered going back in to maintain the trails and fire breaks and fuel breaks that we build there.

SENATOR CAMERON: I believe maybe four or five years ago you had a state plan and each district submitted reports on what would be needed for what they considered a good program, and that included a lot more fire breaks and access roads?

MR. RAYMOND: Yes.

SENATOR CAMERON: And that would cost considerably more money, isn't that right?

MR. RAYMOND: Well, it costs more money. Of course, we get some appropriation each year for operating the conservation camps and this is where most of that, in fact practically all this money goes, into the operation of the camps and use of the inmates in this kind of work.

SENATOR CAMERON: Well, was a part of that program considered in your program in 1959?

MR. RAYMOND: Yes, each year we submit a budget. It isn't always as much as we would like to have it, but--

CHAIRMAN WILLIAMS: Don't lobby the Committee.

Senator Arnold.

SENATOR ARNOLD: I would like you to refer back to page 28 of your presentation here, prosecution of fire law cases. I note there under criminal actions in your statistics for 1960 there were 306 cases initiated by the field, 33 were dismissed or dropped after the District Attorney's review, 273 were prosecuted, and conviction was obtained in 209 cases. In your opinion is that a good ratio of conviction to cases initiated?

MR. RAYMOND: We think this is a pretty fair percentage, although perhaps it could be improved.

SENATOR ARNOLD: It compares favorably with criminal convictions in other cases, doesn't it?

MR. RAYMOND: Yes.

CHAIRMAN WILLIAMS: Let me interrupt you just a moment. The Attorney General's office will have a representative here in the morning. He is prepared to answer questions on the subject. I wanted to get that over to you unless you weren't familiar with it. Go ahead now.

SENATOR ARNOLD: Then, in the next category you had civil action to recover the State's cost of fire suppression and damages, and I believe it was in this category that Senator Collier raised some questions. In 1960 statistics show there were 684 cases initiated by the field, 567 were reviewed with the Attorney General and dropped, and 117 were pursued. There is no statistic here on the convictions. What was the nature of



those actions? How were they screened by your Department or your Division before they were initiated?

MR. RAYMOND: Well, these are generally screened out. Each case is investigated. Every fire is an investigation case. The field people submit the report and fire prevention officers at the district level sort these out by possibilities. In other words, a fire starting along the highway, for example, from an unknown person, there is no use pursuing this sort of thing and these are all segregated out. Those where there appears to be a possible law violation or gross negligence involved, they put together the information that they have on the case and the investigation and they transmit it to our office and we have a law enforcement coordinator whose job it is to review these cases and from his point of view segregate some of these out where there is not sufficient evidence. Those where we have some question, we take to the Attorney General's office and sit down with him and review these and he weighs the evidence and what witnesses we have in the case and if he feels that they can be followed up appropriately, he will do so and then it is turned over to him. Now, these go on for a long time. This is one of the reasons why we don't have any final figure down here, is because some of these cases go on for a long time, sometimes almost to the statute of limitations, and then if the case is filed in the court it may not be heard for a year or two after that. Some cases go longer than this. So that we have a lot of cases dragging out for a long time. In other situations, we are able to

sit down with the Attorney General's office and a representative of the operating owner of property and their attorneys and they conclude these cases without very much difficulty.

SENATOR ARNOLD: In this process of elimination, do you consider the possibility of recovery, I mean what the financial responsibility of the defendant is in the cases?

MR. RAYMOND: That is right. Under the Health & Safety Code, the 13,000 series, it sets up a liability of individuals for damages caused by fires including the fire suppression cost involved in putting the fire out. If they are shown to be in violation of the law, then they are to be prosecuted.

SENATOR ARNOLD: Then, in this figure of 684 initiated in 1960, how many of those were against the owner of property or the operators of timber operations?

MR. RAYMOND: Which figure is this?

SENATOR ARNOLD: 684 initiated by the field, the total number of civilian actions initiated. Who were those against generally?

MR. RAYMOND: Well, railroads, power companies, individuals, utilities.

SENATOR ARNOLD: Do you have any idea as to the percentage as to individuals or the other categories? Do you know what those are offhand?

MR. RAYMOND: They would probably run about 3-to-1 ratio of utilities versus private individuals.

SENATOR ARNOLD: So the failure of conviction in

this category is not against individuals but it is against larger operations?

MR. RAYMOND: In most cases, yes. Also, those are tied down to operations which are easy to trace back, and those against individuals are far more difficult. There is far more time involved. Of course, we work with railroads--for instance, we can work with the individual companies involved as you can see from our records, the railroads have a pretty active program in fire prevention and they have reduced this problem tremendously.

SENATOR ARNOLD: And in those actions, according to your figures, you had 684 initiated and 117 pursued so there were 1 in 6 that actually ended up, well, in the criminal actions against individuals you had 306 initiated and 209 convictions obtained, a higher percent.

MR. RAYMOND: Yes.

SENATOR ARNOLD: That's all I have, Mr. Chairman.

CHAIRMAN WILLIAMS: Any other questions?

SENATOR O'SULLIVAN: I have one. I notice that you mention that the putting in of roads was a fire prevention asset, but isn't it a fact that your statistics here show that roads are the source of most of your major problem. Now, isn't that a fact?

MR. RAYMOND: Well, this is public roads. Now, as far as roads used for the suppression and prevention of spread of fires which are access into areas, you might say they are private

roads. We gets rights-of-way across the property through the individual owners.

SENATOR O'SULLIVAN: Would these be closed to the public?

MR. RAYMOND: These are generally closed to the public.

SENATOR O'SULLIVAN: Would the new ones be closed to the public? If they weren't closed to the public you would just be creating a new problem, wouldn't you?

MR. RAYMOND: This creates problems as far as public roads are concerned. As long as we can maintain them for the purpose of fire prevention only, and usually this is the only reason we can get a right-of-way--

SENATOR O'SULLIVAN: How long do you think you can maintain the private nature of this type of road? If you once put a road in at public expense, wouldn't the pressure then be on you pretty heavily to open it up for public use and it becomes a liability instead of an asset?

MR. RAYMOND: This is true in some cases, but these are put in on standards which the public usually doesn't care to drive over. And they never get in the habit of using them because from the time they are opened up for fire truck travel the public doesn't occupy them so they never get used to it.

SENATOR O'SULLIVAN: Well, considering the fact that cigarettes and matches are such a large factor, do you think



it is alarming enough so it might justify a provision that there shall be no smoking in fire areas at certain periods and no one shall be permitted to carry cigarettes or matches? It is pretty severe, but what about it?

MR. RAYMOND: There are areas in the State now where county ordinances are set up prohibiting smoking in certain areas even on public roads.

SENATOR O'SULLIVAN: Would you recommend a State law along this line?

MR. RAYMOND: I think it might be possible if the Legislature established standards on which it would be applied.

SENATOR O'SULLIVAN: Would you recommend it if we decided to do so?

MR. RAYMOND: I think we might work out the proper standards on which such a thing could be done.

CHAIRMAN WILLIAMS: I think Senator Cameron wants to veto the idea. Thank you very much, Mr. Raymond. Thank you, Mr. Nelson. We certainly appreciate having you here and having your testimony. I'm going to exercise the prerogative as Chairman and skip around on this agenda. Some of the people who have been scheduled for today now I am advised can stay over until tomorrow so we appreciate that very much. I'm going to call on Mr. Callaghan now to make a short statement.

MR. CALLAGHAN: I don't want to frighten you with that word "short".

CHAIRMAN WILLIAMS: Go right ahead. Give your

name and who you represent for the record.

MR. CALLAGHAN: My name is John Callaghn, Assistant Secretary for the California Forest Protective Association. Members of this association own most of the privately owned commercial timberland in California. I should add parenthetically that I am also a member of the Board of Forestry Range Improvement Advisory Committee. Our association has been working for the improvement of forest fire protection in California since 1909. We have kept an abiding interest in the maintenance of adequate forest fire protection systems because we know that without it long-term timber management cannot be profitably undertaken nor long sustained in California. And the management of forest lands for profit to the owner with appropriate regard for any public values involved is the business of our membership. I can't add a great deal of detail to the comprehensive report that State Forester Raymond has given you, but in order to discuss forest fire prevention in its proper perspective I find it necessary to give some consideration to the forest fire protection picture generally.

In California as you know the forest fire protection job is a huge complex one. It is complicated by the great variety of fuel, topographic and weather conditions encountered in different places and times throughout the State. It is complicated by the crazy-quilt pattern of private land ownership intermingled with a variety of Federal, State and local ownerships, local governmental ownerships, and by the consequent mixture of

responsibilities and/or jurisdictions for fire prevention and control. And perhaps most important it is increasingly complicated by the impingement of residential, commercial and recreational developments on formerly wild land areas. Now, to the uninitiated the hodge-podge mixture of ownerships and of governmental jurisdictions and legal responsibilities would seem to make an effective fire protection system impossible. However, under laws carefully drafted to meet the peculiar situations encountered and under policies hammered out with much effort and after many public hearings by very conscientious State Boards of Forestry, a rather effective system has been developed. Considering the complex responsibilities, the jurisdictional situation, this system operating under cooperative agreements has a minimum of overlap and duplication and a maximum of harmony, mobility and cooperative action.

Fires do not recognize ownership lines or governmental jurisdiction boundaries. Any uncontrolled forest fire is a potential conflagration posing a threat to the lives and property of people and requiring a massive and mobile organization to insure suppression.

Furthermore, because of the mobility of our population, most man-caused forest fires are started by persons not resident on the land concerned. For these and other reasons the maintenance of a forest fire protection system on private as well as State lands has been established as primarily a State responsibility. Responsibility for Federal lands, of course, remains with

the Federal government, State laws being generally applicable. The private land owner under State law and Board of Forestry policy has financial responsibility for fires started or caused to be spread by negligence or unlawful action of himself or his agents. Responsibility for taking reasonable action to control any fire for whatever cause burning uncontrolled on his land, if he has knowledge thereof, and responsibility to make his facilities available to the State Forester or his agents for control of fires burning on his land. Timber operators have the initial responsibility for fires in operating areas of mopping up and patrolling a fire once it has been placed under control by the State Forester organizations. I have said that fire protection including fire prevention for our forest and watersheds is a huge complex job. I think that Federal, State, county and district agencies must be spending in the neighborhood of at least 40 million to 50 million dollars a year on it annually. Most of this is for men and equipment for fast initial attack. In some places in Southern California this is so intensive that half a dozen crews from nearly as many agencies can be on a fire within 10 minutes of its report. Private landowners, particularly range and timber owners in furtherance of their responsibility and for self-protection maintain fire prevention patrols, fire equipment and access road systems and so forth. The timber industry maintains or in some cases cooperatively with the Division of Forestry operates several air patrols to supplement regular lookouts for early detection of fires, particularly during periods of poor visibility



and after lightning storms. The industry maintains a fire organization in timber operating areas under regulations established by the State Forest Practice rules. Under these rules, fire hazardous operations are regulated. Daily inspection of operating areas after cessation of logging is provided for, snags, which are standing dead trees capable of causing fires to spread rapidly are cut down, and slash disposal to varying degrees as deemed necessary by the Forest Practice Committees for the different districts is required. With respect to slash disposal I should say that there are a variety of conditions to be encountered in the forest so it is difficult to write an all-inclusive description. In Southern California, in the forest practice rules the requirement is that all limbs on unused portions of the trees that are left in the woods must be severed and disposed of close to the ground. This is for rapid drying to minimize their use as bark beetle hosts and also for more rapid rotting and deterioration.

Also, in Southern California slash must be entirely eliminated along roads and trails and near habitations. In other districts various provisions for either lopping, slashing or clearing fire breaks around log areas is required. These range down to the requirement for the North Sierra District that all the slash along primary county roads and railroads or State highways, that is to say along the area from which a fire is most likely to originate need be treated. In addition the industry maintains many hundreds of miles of roads, has hundreds of bull

dozers, many water tankers, transport trucks and so forth and thousands of men that can be and are used for fire control.

Generally they are well organized for fire prevention and initial attack for their stake is heavy and they certainly provide a major force upon which governmental agencies can and do draw for fire control.

All of my foregoing statement may serve to show that we have a big fire-protection system, Federal, State, local and private, that it costs a lot of money, that it is usually pretty well integrated and coordinated.

I think a study of fire statistics will show that as far as burned area is concerned we are generally doing a better job now than we were in years gone by, at least under equivalent weather conditions, but it is certainly costing much more to do it.

Furthermore, with the increase in population, with its rapid encroachment residentially into wild land areas, with its increased mobility, the values at stake are increasing, the risk of fires starting is increasing, the exposure of your life and property to fire is increasing and the difficulty of controlling a fire once it gains headway is often greatly increased by virtue of many exposures of structures within the fire perimeter.

A very small percentage of fires during a few days each year do most of the damage. Unfortunately, many of these are of incendiary origin.

To me the situation calls mainly for two things, first

better and faster initial attack on fires that can't be prevented, and I know we can't prevent them all; and secondly, a real crash program of fire prevention. Neither one of these is a substitute for the other. In some cases air tankers may be helicopters with newly developed equipment. Stand-by air tanker use and integration of helicopters into the system for transporting ground crews seems indicated. This is a new venture. It may be somewhat expensive initially. In time I believe it will permit the use of smaller numbers of more highly trained men as initial attack crews operating from fewer bases. They can be backed up by helicopter, by inmates from conservation camps and such a program will require real organization, careful studies, plus the development of numerous heliports. It does, however, offer real promise for increased effectiveness and may when perfected result in elimination of sufficient bases to compensate for its cost.

I should recommend that this program be studied and possibly a pilot area undertaken. The fire prevention program is an extremely difficult one for a number of reasons. In the first place, as Mr. Raymond indicated, data on who starts fires is not always too reliable. After all, we don't have many eye-witnesses. Where knowledge exists as to who started a fire, a strong law enforcement program will often be helpful, especially if attended by widespread publicity.

Unfortunately, however, recent research gives some indication that many fire starters may be people who just don't get

the message through the customary channels. In fact, maybe they are habitual lawbreakers. More research in this field is highly desirable so that fire prevention efforts can be channelized to where they can do the most good, but along with research in the human behavior, some research on how to develop better more meaningful data on field fire reports seems overdue.

Included should certainly be consideration of the adaptation of fire reports to data processing machines and consideration of uniform reporting among agencies. Even without these studies, however, I'm convinced that existing personnel on the basis of local information put in the proper form on a very local basis over several years can do much more for fire prevention than has been universally accomplished in the past.

In many cases, fires cluster in given areas year after year and fires from given causes seem to take the same pattern. On a very local study basis indications of what actions will be required for hazard reduction education, for law enforcement, may be derived from study. Lumped with hundreds of other reports on a large area basis, however, tends in fire occurrence to cancel out. I do not wish to imply that such matters are not being given consideration by the Division of Forestry administrators. I know only too well that they are, but I do wish to emphasize that fires are started in the field locally by somebody and that local attention to why they are started and what may be done to prevent them probably is more productive than mass analysis of area-wide data. The latter is necessary to



create general public attitudes which are desirable, but they don't necessarily uncover the specific action that will prevent recurrence of a specific kind of fire in a specific area.

Another complication in fire prevention is confusion between the use of fire as a tool in land management and wild fire because fire can be expeditiously and legitimately and properly employed as one step in conversion of low productivity range brush land to more productive grass lands, so people have come to believe that any fire in brush does good, hence should not be controlled.

While there are still some brush areas in California where a fire that has escaped initial attack can be controlled with a minimum of forces judiciously taking full advantage of topography, natural firebreaks and time, these areas are decreasing rapidly as the population expands. In addition the good effect of one fire in brush elimination is very short-lived for most brush has produced great quantities of seed which germinate most readily after a fire, and as pointed out, complete conversion is most desirable. The idea that change from brush to grass offers security from fire is greatly overrated. Fires start more readily in grass than in heavier fuels. They burn more rapidly on the ground in grass than in heavier fuels, though it is certainly true they do not spot so far ahead and they are generally easier to extinguish. When extreme fire weather prevails a fire in most any fuel can be disastrous.

Fires in Solano and Contra Costa Counties, mostly grass,

are reported to have burned some 80,000 acres in one afternoon last summer. The Harlow fire near Maiposa County line was reportedly started by a young man who had apparently been led to believe it would do good and was not apprehensive about the potential for disaster. It burned in an area where control burning to eliminate brush is commonly, properly and legitimately practiced and where as a consequence there is a considerable mixture of grass and brush. A portion had been burned over recently in a wild fire and reseeded to grass. This prior fire under the conditions existing proved difficult to control from the outset and on the second day spread fire over about 20,000 acres in about two hours burning a large number of houses in the process. The brush conversion problem is not a simple or easy one. It can be justified on its range improvement merit under appropriate conditions.

Full conversion to grass should be encouraged. It seems to me, however, that claims for control burning as a panacea of fire prevention or even for fire control needs to be sharply qualified. Certainly the suggestion which appeared in a local paper that there was no reason for the recent fire in the Bel Air section of Los Angeles and the implication that it could have been prevented by control burning is a ridiculous fallacy. Yet, I would agree that in large brush-covered areas the development of broad bands of grass, preferably perennials which stay green longer, is desirable as a means of providing access for fire fighters with a higher degree of safety and as a pre-developed

and better place from which to backfire. Such a program has potentials not for fire prevention but for conflagration prevention. With the growing availability of inmate labor it may be feasible and it is in the public interest. Development of methods not only of establishing such areas but of maintenance which is quite a problem should be encouraged.

Where such fuel breaks intersect or parallel well-traveled roads, much study is required to make sure better conditions for fire starting do not result along roads. Along roads in some areas it is possible that keeping the brush trimmed and dead material cleaned out from under it on roadside strips might be a better fire prevention measure than conversion to grass and may be more economical and practical than attempting to convert to another shrub. I don't believe that the shrub that is fire-resistant when mature has been found yet and I doubt that it will, but brush without lighter and dead branches and without dry grass undergrowth does not carry fire well and of course fire fighters know that young native growth such as chemise is quite fire resistant. I should like to see modification of existing brush cover along roads in hazardous areas tried on a trial basis as a fire prevention measure in the fuel break program.

Fuel breaks of this sort as well as fuel conversion may each have their place. I'm concerned about the misconceptions about controlled or broadcast burning as fire prevention and control measures, because both have been advocated for timber areas. Broadcast burning to reduce accumulation of litter sometimes known

as light burning has been tried over and over by timber owners. Universally they have abandoned it except on a very very limited basis because too many young trees are burned up. Too many light fires escape control and too much damage to the valuable mature trees resulted. One of the earliest studies of forest problems in California reported in Forest Service circular in 1906 states that it is safe to say that the effect of fire on the virgin forest has been that of thinning it. The greater part of California's pine forests today are not producing within 25 percent of the timber which the land is capable of producing. Timber owners have reached the same conclusion through bitter experience. This is not to say that the use of slow-spreading carefully controlled fire cannot under some conditions reduce fire hazard for a while. The problem is to get it done safely and economically and frequent enough to keep the hazard from natural litter and branch accumulation reduced.

Timber owners have found this so far to be impractical. Broadcast burning of slash has also often been tried in California. Damage to residual stands has generally been severe and in the end the larger material on the ground which causes the most problem in fire control has not been greatly reduced and new hazards have often been created through the burning of the fresh material.

Slash is a problem in fire control and so for that matter is the debris and fallen logs in a virgin forest. Elimination by broadcast fires has been abandoned except for some areas in the Redwood region where it is still practiced under carefully controlled



conditions, and except in clear-cut areas of Douglas fire that are being prepared for reseeding or replanting. Elimination of slash by other means is a costly process and the cost-benefit relationships are not clear. The effect of slash on fire control under different forest conditions is not clearly established. The conditions under which it is a major impediment to fire control needs to be more carefully gone into. This will require revision of fire report documents.

The existing research in slash disposal-fire relationship being conducted by the Pacific Southwest Forest and Range Experiment Station should be accelerated. Meanwhile, the Forest Practice Committees are capable of keeping abreast of the need for regulation of slash disposal and owners will continue to reduce slash in heavy accumulations when and where it seems advisable in light of present knowledge.

Fuel breaks in timbered areas may be useful if done in such a manner as to reduce the highly inflammable litter and low growth without unduly opening the timber side to drying and brush growth. What is needed again are areas of less heavy fuels which will provide access, better safety and ease of fire line construction and backfire. Periodic reduction of litter there would probably be required.

Senate Resolution 25 by Senator Cameron requests extension of such a program in Northern California and I believe the implementation of that program is desirable.

In summary I'll say that I believe our large and diverse

fire problem needs to be attacked from two sides, first increased effectiveness of initial attack through decreasing attack time, by use of fire tankers and helicopters as an integrated tool in the fire control system; and by improving detection to cut report time; and by realigning existing forces periodically as studies indicate might be permissible; and by the development of a fuel break system where feasible to make control in the first burning period more probable.

The second phase of this attack should be through increased fire prevention effectiveness. This may be accomplished I think in several ways, through the study of fire causes, and fire cause reporting followed by indicated specific prevention actions and in this regard I call to your attention the statement by Mr. Aurignac of the Board of Forestry who with his group I think has done an outstanding job of cooperative effort with State agencies in accomplishing on-the-ground fire prevention.

Secondly, in fire prevention research on people's attitude toward fire followed by an education program designed to overcome the problem discovered in this research, that is to say, to get the right message to the right people, needs to be accelerated, and as Mr. Raymond pointed out there is a necessity for increased emphasis on law enforcement.

In that regard, I should like to point out that part of the State Forester's law enforcement program entails a law enforcement coordinator which I believe was established in 1957 and I believe they now have their third one. This presents some problems

in getting law enforcement coordinated.

CHAIRMAN WILLIAMS: Any questions of the witness?  
Thank you very much.

SENATOR O'SULLIVAN: Mr. Callaghan, you were here and heard testimony this morning. Would you agree that most of the fires are caused by local persons?

MR. CALLAGHAN: Yes, but I think that we should define what a local person is and this is not very well done any place to my knowledge. When I say "local person" I'm not quite sure what I'm saying.

SENATOR O'SULLIVAN: Let me read you a list, rancher, farmer, tenant, resident, children--I presume they included only local children.

MR. CALLAGHAN: What is local though, I don't know.

SENATOR O'SULLIVAN: Travelers, forest product workers, construction workers, hunters, fishermen, recreationists, tramps--

MR. CALLAGHAN: Those can be or cannot be local depending on where they come from, you see. I would say generally in a broad sense of the word, yes, local people rather than the people from San Francisco or Los Angeles coming up to Placer County we'll say. It's probably the people from Placer County or maybe the eastern edge of Sacramento County.

SENATOR O'SULLIVAN: Would you say the greatest cause was tobacco smokers and matches?

MR. CALLAGHAN: I'm a little afraid of that one.

I really don't know and I don't think the people putting that down as a cause necessarily know either and I think they would agree. In other words, we have to realize that since there is mostly no specific on-the-ground evidence of how a fire is started, oftentimes a logical guess based on experience and knowledge has been made in order to give it some kind of statistical significance. There is a tendency, and I think perfectly understandable one, which I don't criticize, to say smokers, tobacco and matches caused the fire when that is as good a cause as any.

SENATOR O'SULLIVAN: Would you say or would you agree with them that the increase in the number of fires is mainly attributable to man-caused fires as opposed to lightning?

MR. CALLAGHAN: This is an extremely variable thing. Lightning may be practically non-existent one year and you may have the heaviest year on record the next year.

SENATOR O'SULLIVAN: I notice the number from lightning in a six-year period varies from 91 up to 298 with no apparent trend at all.

MR. CALLAGHAN: This is in the State Division of Forestry areas. If you were to look at the statistics for the United States Forest Service I think you would find a preponderance of their fires are lightning fires.

CHAIRMAN WILLIAMS: Of course, they are in higher altitude. They have more snags in there to attract lightning, is that right?

MR. CALLAGHAN: Well, I'm no authority on lightning



attractions, sir.

SENATOR O'SULLIVAN: Would you agree that most of them occur on wild land as defined here?

MR. CALLAGHAN: I think that is correct.

SENATOR O'SULLIVAN: We have to arrive at some decision as to where the thing is located, in what general area.

MR. CALLAGHAN: This is a real serious problem, sir.

SENATOR O'SULLIVAN: Now, let me ask you a general question. Do you think we are in any position from what information has been gathered and presented here to make a determination and to enact policies or statutes based on it? You seem to have some question about whether matches and cigarettes and so forth are the major cause.

MR. CALLAGHAN: I think they are a major cause. I would question whether it was nearer 25 percent instead of 36 percent or something on that order, perhaps.

SENATOR O'SULLIVAN: But you think they are a substantial cause?

MR. CALLAGHAN: Oh, very definitely, yes.

SENATOR O'SULLIVAN: You think--you seem to feel that the local--do you feel that the local enforcement or the statutes that local authorities could use are adequate for enforcement considering what we just discussed?

MR. CALLAGHAN: Generally speaking, reasonably so. I think the State Forester enumerated a few points on which

improvement might be initiated. I have forgotten just exactly what those were right now. They don't come to mind. I would say generally the statutes themselves are not too bad with some modification.

SENATOR O'SULLIVAN: In these periods of high fire likelihood do you think we would be justified in enacting statutes to make it illegal to carry matches or light them outside of certain areas within the fire areas of the State?

MR. CALLAGHAN: Yes, I do. I think in time--I'm not sure that we are quite prepared for it now, through the use of new tools that have been developed through research in terms of classifying potentiality of fire starting, a so-called fire ignition index has been developed through research with the Weather Bureau and Forestry agencies which might be used as a basis when refined. I don't know that it is refined enough right now for certain regulations with respect to fire and certainly one of those which comes to mind, and this is a difficult one to work out, is improvement of the present law which limits access to areas under conditions of high fire hazard, so-called closure laws which the State Forestry would probably be able to give more detail on.

SENATOR O'SULLIVAN: You would be favorably inclined or more inclined at this time toward a tighter closure law in the State?

MR. CALLAGHAN: I would definitely.

SENATOR O'SULLIVAN: What would the effect of that

be when you consider the fact that the local residents seem to be one of the major causes of the fires?

MR. CALLAGHAN: There again we come to this word "local", and I was careful to say that I thought most fires in the wild land areas were not started by the residents of the land on which they occurred. I think in general this is true. It may be fairly close, maybe 45 percent to 55 percent, but then "local" envisages in my mind people from 15, 20, 30 miles around as compared to 150 miles away.

SENATOR O'SULLIVAN: Have you given any consideration to any statutory tools at a local level?

MR. CALLAGHAN: You mean county ordinances or State laws?

SENATOR O'SULLIVAN: At the local level.

MR. CALLAGHAN: I haven't really. In a number of counties there are certain ordinances against smoking, for example, under certain conditions.

SENATOR O'SULLIVAN: If we do enact regulations or statutes, if the Legislature should decide to grant powers, should they be to a State agency or should they be to the local county government in your opinion, or do you have one?

MR. CALLAGHAN: Well, this is not a very easy question to resolve just real quick, Senator. I think I would rather not render an opinion on it at the moment.

SENATOR O'SULLIVAN: All right.

CHAIRMAN WILLIAMS: Any other questions? Thank you

very much, Mr. Callaghan. We appreciate having you here and having your testimony. Now, I want to call on Chief William J. Miller, Los Angeles City Fire Department.

MR. MILLER: Mr. Chairman and Members of the Committee, I don't exactly know what I can contribute here other than I can probably have bigger fires than anybody. I think a lot of valuable thoughts have been expressed here by the State Forestry. I think there are some points that your Committee should consider for possible legislation or possible laws. The field of fire protection, of course, is very broad and I believe that I understand that you are primarily interested in fire prevention. It has been brought out that fire prevention does cover extinguishing fires after they once begin which I believe comes to one strong point that practically all of the fire services in the State, and I think this includes the State Forestry, practically all of us have been stripped of manpower because of the economics of the thing. Generally, this doesn't make too much difference until you happen to wake up some morning and find yourself in Bel Air and then it becomes real evident to you as to just what has been happening. I think this has happened in nearly every fire department in the State. It is a serious matter. It probably isn't a legislative matter, but I think this is a good place to voice. You can watch fire rigs going down the street or the road all up and down this State with one or two men on them which are entirely inadequate to put out any kind of fire. So much for that.



It is my observation that people are building to burn and unless someone stops them why they are going to continue to do it. I think that building laws on a State level and on a local level have got to be made much more restrictive when we get into these wild lands or mountainous areas. I think we have completely overlooked the hazard of combustible roofs which probably isn't too popular in some parts of the State. I think we have permitted people to just take a bulldozer and a grader and go in and dig out a driveway and build a house back in here some place without any thought as to how anyone would be able to get in there and maybe rescue them from their own folly or to save their home if they were fortunate to escape. So this matter of access, and it has been discussed here today, but this matter of access is a very important one and it is very important in the wild land areas as well as the city areas or any mountainous area. When you have a fire burning and you have to drive away down a canyon just to get over to the next street, way down and up, this has quite a bearing on your mobility in being able to combat or keep up with the fire. Roads cost a lot of money but so do fires. A lot of thought, if we are going to permit people to build in the hills, and I think we are, a lot of thought should be given to roads and to access before these areas are permitted to develop. A lot of thought should be given to water when they get into these areas. It is pretty hard to go in and fight fire in some of these places without any water.

The brush clearance has been mentioned. This is a very

important part of building in the mountains. If the firemen or someone has a chance to get around that house he might be able to save it, but if the brush is growing underneath it or under the eaves or over the roof, there is no human alive that can stand it to get in there and do much about it. It is picturesque and it is pretty and it looks nice until it gets on fire and then it becomes kind of ugly.

Talk has been given here this morning with regard to fire breaks. I think a lot of research needs to be done somewhere. I know a lot has been done, but a lot more research needs to be done on the matter of fire breaks. There is such a thing as building a fire break up here and setting up a big erosion and flood condition down below for someone. I think that products could be developed or plans could be developed that would provide these fire breaks and also eliminate the erosion problem.

There are materials that I am sure are being used to make the roadsides fire retardant. This no doubt is expensive, but it certainly is a program that should be explored and researched to its fullest.

The inmates and the camp crews have been mentioned here and I want to tell you that we used many of the camp crews, in fact all of the ones that were available, in Los Angeles County and they were tremendous. They were tremendously helpful. The ones that we used were the juvenile crews. Maybe we could have used the adults, but I was told that we couldn't. I could be wrong. If we can't use the adults, then the law should be changed

so that we could. These people can be trained. They can be watched and they can be used in areas where they wouldn't be in any danger.

SENATOR ARNOLD: I have a question, Mr. Chairman. I would like to develop that a little further. What were the reasons given why you couldn't do that?

MR. MILLER: I was told that they could only be used on public or Federal lands. This may not be true. It may not be true, but this was the information I had. At least this is an inhabited area where this fire was and maybe it is uninhabited versus inhabited. This can be explored, but this should be corrected so they can be used.

Tighter laws have been mentioned and I would like to just comment briefly on tighter laws. There are some pretty good laws on the books. There are some laws that need amending. There are some new laws that probably need to be adopted, but one of the troubles that we have when we cite a person in for violating a fire law is that he will probably get a five-dollar fine suspended. But when you park your car illegally they will fine you \$10.00 without ever thinking anything about it. So the people who have the responsibility for putting the teeth in the law need to be talked to and I believe that stiffer penalties are needed. We were able to accomplish this with a couple of judges near our mountains and we got some people some pretty good fine for smoking in a closed area and we publicized it and it did some good, but too often the fellow gets \$5.00 suspended. There is a lot of

fire prevention work that goes on. We participate in all of the State programs that we have. We encourage it every way that we can. There are two things that are true. One is that you can have the safest building in the world, you can inspect it today and it will be immaculate. This doesn't mean that some fellow isn't going to burn himself up in that building tonight. What I'm getting at is this field of public education. Here is where we need to exert a lot of effort. We have a good junior fire department program going in the Los Angeles schools, but in my mind it is not extensive enough. It seems to me that more education should be brought into our schools in the field of fire safety and it needn't be an hour on fire prevention once a week. It can be integrated with almost every study that the child takes so that he gets a smattering of it nearly every day. He may just as well be reading that fire causes harm as that two dogs chase a cat when he is learning to read. He could be learning to read this and get some thoughts to him. This isn't to criticize the education but this is a field in the long-range program, but if we are ever going to get any education across we have got to get started with the children and bring them into it. I believe that there was such a measure proposed about six or eight years ago and it didn't get passed for one reason or another. I'm not quite familiar why, but I think this should be reopened so that we get into this field of education. This is the place where we have to work. It's been highly advertised.

The fire that we had in Bel Air and the great property



loss that it did, and it was terrible, was widely advertised. The following week-end we burned up four people in the City of Los Angeles and I doubt if any of you read a thing about it. I don't know which was the worst. One didn't burn up anybody but burned a lot of buildings. The other two or three fires burned four people. So this education is really important. This is the field, this with tighter building laws, stronger enforcement and good strong fire departments is the only answer that there is to it. I think that is about all I can contribute. I'll be happy to answer any questions.

CHAIRMAN WILLIAMS: Any questions? Senator Cameron.

SENATOR CAMERON: During lunch I happened to talk to a few people who were a little familiar with the disastrous Bel Air fire and some of your remarks seem to be drawn from that experience, and I come from a lumber-producing area, so that is really beside the point right now because we have a similar interest in our area, but apparently in that fire there would be houses burned surrounded by houses not burned and the only difference was whether they had a shake roof or a composition roof.

MR. MILLER: This isn't entirely true. There were a lot of shingled roofs that went through the fire, but those that did, somebody was there to do something about it, either the fireman or the people or someone was there to get them wet down. There were houses burned that did not have shingled roofs, but some of them had large picture windows and when the heat wave

would come it would bust the window and the sparks went into the house and away she would go. The facts are that the shingles did contribute to the further spread of the fire where the rock roofs do not.

SENATOR CAMERON: Would it be your recommendation from a fire prevention standpoint that in those foothills or mountain areas where homes back up against brush that at least for a certain area that shingled roofs be prohibited?

MR. MILLER: I have made the recommendation to the Board of Inquiry on the fire that they eliminate shingled roofs or any further extension of shingled roofs in the entire city and especially in the mountain areas. You can get these conflagrations in the flatlands, too. People have had them.

SENATOR CAMERON: Incidentally, that could be done either through your building code or in subdivision ordinance or both, I suppose, but do you think that is of enough State-wide necessity that the State should take some action on it itself, or do you think that should be left entirely to the local jurisdictions?

MR. MILLER: I think it should be left to the State officials to decide.

CHAIRMAN WILLIAMS: Then, you come up here and say, you made the law, now give us the money to carry it out. We have got our fingers burned several times on that one.

SENATOR CAMERON: You are a little more familiar I think with this than I am. Do you think that serious enough to

require State legislation or do you think it can be left to local jurisdiction?

MR. MILLER: Well, I would certainly recommend it for our city. I think wherever you have any congestion of homes and we could argue all afternoon on what is congestion, but where you have congestion of homes I think that it should be prohibited. I think that there are materials that can be developed to make shingles fire retardant if they will get about and do it.

SENATOR CAMERON: You were talking about access. I'm familiar with the Bel Air area. You have really a highway, Sunset Boulevard, that runs roughly east and west, we call it that anyway, and then the only other one is Mulholland which in some cases is about 5 miles away from Sunset and there are no other parallel through roads. You have just these winding canyons and dead-end roads on knolls. From the standpoint of fire control is that a serious problem?

MR. MILLER: Very serious.

SENATOR CAMERON: And I imagine you recommended also to the county or city that--

MR. MILLER: I recommended that they make a study and build two more roads across there hoping that maybe we would get one, but at least it would do this. It doesn't only give you access, but it provides a place where water mains can be put in so that you can get a better water supply in the area.

SENATOR CAMERON: I also understand and from just lunch-time conversation that there were certain areas there that

your water mains were not really adequate and that you ran out of water. Is that right?

MR. MILLER: This is true in nearly all of the real bad burned area. The water usage was so great that the system just would not provide it. Water Department people say there were 37 million gallons above normal that were used. Hydrants that normally had more than 150 pounds pressure in them were pulling vacuums. You can't save many houses when you run into that.

SENATOR CAMERON: We had a similar thing this summer, nearly lost a third of Auburn, and I think what may have saved them was enough of these volunteer trucks and tankers plus a few strategically located swimming pools, but do you think the subdivision or the ordinances or if necessary the water systems should be so changed as to provide more water, or is this one of those things you can't possibly handle?

MR. MILLER: I think it should be strengthened very greatly if they are going to develop in there and I have a hunch it will be now. They have done a lot of work on it.

SENATOR ARNOLD: Do you have ordinances down there in this area on brush clearance areas?

MR. MILLER: We are in processing of adopting brush clearance ordinances and were before the fire. The Los Angeles County, and the gentleman is here to speak for himself, but they have an ordinance that we feel is about what we want and we will try to adapt a very similar one so the law is uniform throughout the area and it does require brush clearance at least 30 feet



and can be as much as a hundred feet as being necessary.

SENATOR ARNOLD: If these were in effect, we'd have cut down the loss?

MR. MILLER: Probably would have some, yes.

SENATOR ARNOLD: To any great extent?

MR. MILLER: It is awfully hard to tell. The fire was jumping half a mile at a crack. It would jump clear from one ridge to the next one, but where there was clearance, generally someone could get around there and beat the sparks off the roof and do something about it. If there isn't clearance, the heat drives them up. It would have helped. How much is awfully hard to estimate.

CHAIRMAN WILLIAMS: Any other questions?

SENATOR QUICK: Had you had down in that area control burning previously, areas of a quarter-mile or a half a mile wide, wouldn't that have been of great benefit to you in combating the fires that were so expensive down in that county, down in that area?

MR. MILLER: I don't believe you would ever dare try it there. You couldn't now that it has built-up areas in it.

SENATOR QUICK: In other words, it's gotten out of hand, the brush and the population in there?

MR. MILLER: This brush is real explosive. It is very dangerous to set off.

SENATOR QUICK: But in normal rainy seasons, couldn't this be controlled to a degree where it would give you more room

to fight a fire where you could get through?

MR. MILLER: There is probably some areas where this would be possible. Much of it is too steep to do it. I don't know anyone who would have the courage to set that off, really.

SENATOR QUICK: I appreciate that, but the point I asked is have you had this control burning?

MR. MILLER: If we had clearances, yes.

SENATOR QUICK: The high wind and the fire jumping so far that you couldn't get to it anywhere. In other words, you have a situation that you can't do anything about. Just let it burn out and hope to stop it down at some other place.

MR. MILLER: Well, we had fire breaks as such, but--

SENATOR QUICK: But they are usually too narrow.

MR. MILLER: They didn't mean anything. Sepulveda Boulevard, a big wide street, and it jumped from one ridge clear over to the next ridge on it.

SENATOR QUICK: I appreciate that.

MR. MILLER: But normally if a fire burns on a solid front you can get in and make a stop.

CHAIRMAN WILLIAMS: Senator O'Sullivan.

SENATOR O'SULLIVAN: What started that fire, do you know?

MR. MILLER: I think so, but I'm not real sure.

SENATOR O'SULLIVAN: Kind of an educated guess?

MR. MILLER: I think a careless act by a person.

SENATOR O'SULLIVAN: Did it start in a house or outside?

MR. MILLER: No, it started right out in the brush. It was not an arson fire, we are sure of that, but probably a careless smoker.

SENATOR O'SULLIVAN: You made my point, I guess.

SENATOR QUICK: I was reading something in the paper that you had some fellow picked up down there.

MR. MILLER: Yes, they picked a man up just a few days after the Bel Air fire. He set the fire on the following Monday. The day of the Bel Air fire he set one over in Benedict Canyon which fortunately we got with a bomber real quick. He set another one in the city out near Tujunga.

SENATOR QUICK: Is he a competent person or does he have hallucinations?

MR. MILLER: He is a fellow, they let him out too soon. They had him in once, but they let him out too soon. He is a mental case.

SENATOR QUICK: It will be a little difficult to prosecute him then.

MR. MILLER: I don't know. I hope not.

CHAIRMAN WILLIAMS: Any other questions? Thank you very much. We appreciate having you here and having your testimony. Captain Virgil DeLapp, Los Angeles County Fire Department.

MR. DE LAPP: Mr. Chairman and Members of the Committee, I am representing Chief Klinger. He regrets he couldn't

be here today, but he had some long-standing commitments and as Chief Miller just told you, along with Chief Miller and others down there he has been rather busy the first part of this month, so it would be impossible for him to be here today. I'm not going to read this statement to you. I want to verbally highlight some of it. It certainly isn't all of our problems as far as prevention is concerned, nor do we offer the solutions necessarily. We really want to point out to you just some of the more pertinent facts as we see them in connection with fire prevention.

I may be a bit repetitious as to what Mr. Nelson and Mr. Raymond said, but if so, it is more to emphasize the fact that there are many common denominators that we feel people in forestry or fire protection have to think about. One of those, of course, is our weather and our climate.

In Southern California, and I'm not talking about the Chamber of Commerce type of climate. I'm talking about the type that we have down in there in which in about eight months of the year we have practically no rainfall and we have frequent high winds, very low humidity, very low fuel moisture and the other four months of the year we do have some rains with intervening periods when we do get the Santa Ana conditions. In other words, we have a year-long fire season down there.

This means that we have to do something to try and take care of our rising fire hazards. Now, these same conditions that affect vegetative cover fire will also affect in the main a structural fire. We heard a great deal about removal of brush here this



morning and we are not here to talk on that except on the plus side of the equation as we see it down there

We certainly are not against the use of fire as a tool when it is properly used and under proper control, but in Southern California, as Chief Miller said here, particularly where we have all of the area developed or it is rapidly developing, we have got to retain all of that vegetative cover, every bit that we can possibly retain without endangering life and property because we have to prevent erosion. We have to take care of our flood problems and we have to conserve water.

Los Angeles County taxpayers and the Corps of Army Engineers has spent nearly half a billion dollars in flood control measures down there. This includes the city and county and we certainly can't afford to see this area burned over, not one acre of it. It doesn't have to be in order to take care of people and by that I mean removal of the brush. We have confined our remarks here today, Chief Klinger has in his paper, to the rather broad subject of fire prevention and I think a definition of fire prevention might be worthwhile to point up our problem in here. Simply the purpose of fire prevention is to lessen the factors which cause fires and which spread fires. Corollary definitions of risks and hazards are as follows. Risks are the causative agents such as humans, and I'm not talking about lightning. I suppose you could call it a risk. Hazards are the burnable materials. It doesn't make any difference whether it is structures or vegetative growth or automobiles or what-have-you. These

are the things we're talking about today in Chief Klinger's paper.

As Chief Miller indicated to you, in Los Angeles County there are six and a quarter million people in that county today and we know conservative estimate is that there is at least one million people that are living either within or adjacent to the brush-covered area. I'm talking about the various cities, about the National forest and the unincorporated areas of Los Angeles County and there are several million or more that we know by count that travel the highways that come in and out so we really have a big problem when it comes to risk.

Our hazards are already there. Unfortunately 98 percent of our fires are man-caused fires. I'm talking about our watershed fires, wild lands. They are the preventable fires. Some are accidental.

Now, in our form of government here, we just don't rely on police power to go out and accomplish some objective. We have to use our police powers through constituted laws to achieve our objectives, but as Chief Miller again said, I want to use him, education is the big problem and our police powers which are used through constituted laws are the basis of that educational program. We are not going into all of the means of educational programs that you people will hear about. You heard some this morning, but we know they are there. We know that this Department cooperates with the State Division of Forestry, the cities, the Federal Government, all of the fire protection agencies down there,

in addition to our own programs, to put on the regular type of educational program.

But one thing that I do want to point out as was pointed out by Chief Miller is our Junior Fire Department. The City of Los Angeles has a very fine Junior Fire Department. So do we in Los Angeles County and I believe in Orange County the State Division of Forestry has one. Now, this goes on continuously throughout the year by trained personnel of our Department, and we feel that this is very very important. When you reach the child it goes beyond him. It goes to his parents in many cases. This is one of the highlights we think in our prevention program.

One of the other factors that is absolutely necessary is a fire code. You can call it a fire prevention code if you want, but we call it a fire code. This is the basis that we use for the elimination of risks and hazards whether they are in watershed areas or in structures. In our particular department we do have, and our cities have the same thing, we have a Fire Prevention Bureau. We have 50 men in that Bureau under an assistant chief. Those men are all highly trained and they do the specialized work and they train our various fire fighting units, our engine companies in the field, in handling their inspection work, in the educational program and all the facets that go to make up a good fire prevention program. In that same Fire Prevention Bureau we have what we call the weed abatement section. I'm just going to bring out a few of the things that we try to do about these things. This weed abatement section goes out and posts

lots and areas where there is grass or weeds or things that have to be removed and then if they are not removed by the owners, of course they can go ahead and remove them.

You can find in the back of your little folder here our new clearance law. One of the things that we do in this clearance law is to try to remove the hazards from around houses. I'll go into that again in a second. The means of doing this, of getting this done on the ground is our patrolmen. All of our fire stations, that is, those within the watershed area of which we have some 30 now, have a patrolman. He is a trained man and he is out every day in radio contact and he responds to fires and it is his job to not only go out and inspect our risk and our hazard, but to go ahead and try to make friends with people and get them to do the proper thing. Also in our Fire Code--I'm just hitting the highlights of what we have done in this Fire Code and some of the amendments. We now have a closure part. That closure works something like this. It allows the United States Forest Service authorized officers to use the county ordinance enforcing closures any place in the National forest where the National forest has closed that area. It also allows the Chief of the Department when requested by the property owners to go ahead and close after July 1 any property that these people request.

Now, it can be used, but only under permit, and that closure can be continued until such time as he sees fit to remove it. These ordinances have been passed by the Board of Supervisors.



SENATOR ARNOLD: Could I ask, that closure, who requests it, the property owner himself?

MR. DE LAPP: The property owner. You will find that, Senator, in the small sheet sticker here in the back. The property owner must request that, that is correct. We heard this morning a great deal about clearing and about various risks and hazards. As I said, we could have a Fire Prevention Code, but we do feel that there is need, at least we think that a Committee like this should give it a great deal of thought, that there is need for a basic Fire Code in the State of California. Let me go one step further. I know personally that for many years back we had nothing. I worked a good many years in the United States Forest Service before I went with the county. We had nothing but the State statutes on burning permits. Since those were on the books, counties like Los Angeles County and many other counties have used those as a basis to build up their own code and we think that this is well worth study by a Committee such as this to come up with a basic Fire Code. It goes into a reasonable amount of structural aspect, nothing like you would want in the city, perhaps, but clearance, smoking, many of the other facets that you probably have scattered through some of your codes right now. I know in your Forest Practice Act you do have certain things that have to be done, but we think that a Fire Code would be desirable, that any county or any fire protection district or anyone that jurisdictionally wants to or has the right to, could adopt that code and use it. As it is now, as I understand it,

there is no State Fire Code, so they have to depend completely on a local code, either a Fire Protection District Code or upon a County Code.

Now, I want to say just one thing more along that line, that if a local government entity such as a county is handling their problem, that is fine. But if they are not, or if they want to adopt this code, then I think it should be available and there is no such thing on the books today.

You heard considerable talk about arson and incendiarism this morning. Chief Klinger is very strong on this point. You heard Chief Miller talking this afternoon. We just don't think that the State statutes are strong enough now on the fellow that deliberately goes out and sets a fire, whether it is because he is a psycho or whether it is for pure orneriness or incendiarism, he disregards what statutes are there now. We don't think the laws are strong enough. Now, I'm not talking about the legitimate use of fire as a tool under proper permit. I'm talking about the fellow that completely disregards it. You get into problems.

SENATOR O'SULLIVAN: May I interject a question?  
Isn't arson a felony?

MR. DE LAPP: I'm not a legal man, but I understand that it is.

SENATOR O'SULLIVAN: What more could you do? You might raise the sentence some. How much more serious would you make it than say 1 to 10 years? It has to be a year or it isn't a felony.

MR. DE LAPP: Let me say this. I mean it as no reflection upon the courts. I think very often the courts are very lenient. Maybe it is because of their attitude. I don't know. Maybe it is because of the laws, but I think it is like your narcotics situation. This thing hasn't been probed far enough, I don't believe, to determine how strict you want to be in these laws because a fellow gets a sentence and maybe gets out in a year's time and he is off and running again on these things.

SENATOR O'SULLIVAN: The only arson case I can recall in my area, a man got a penitentiary sentence, but is it common in Los Angeles where a willful arsonist has committed a crime and either admits it or he is convicted to be not given a penitentiary sentence?

MR. DE LAPP: I'm not prepared to answer that but my own guess would be that that isn't the case, but I don't think that the laws again in my simple language are strict enough, the penalties. We don't want to persecute anybody but we want them heavy enough to deter a lot of these fellows from going out and setting fires. A lot of people wouldn't commit murder because they think they are going to be hanged. This is rather a crude parallel, but somebody decides he wants to set a fire and he figures he will get by with a minimum sentence, maybe a year or less.

SENATOR CAMERON: Are you thinking of the situation where there is a deliberate violation of the burning permit law which is only a misdemeanor, or a deliberate violation of certain

of the serious fire regulations which are only misdemeanors?

MR. DE LAPP: Correct, it is a disregard for society as a whole, people or his neighbor or anyone else that he does this thing. Of course, we would have the psycho. We do have the fellow, such as Chief Miller mentioned down in there. He has been in the Veterans' Hospital. He will probably be put back there, in the mental hospital, and maybe he will have a recovery and be out and off again in a year. We hope not. Any other questions on that?

SENATOR BROWN: I understood him to say that most of the fires are man-made. Is that your opinion?

MR. DE LAPP: 98 percent of our fires are man-caused.

SENATOR BROWN: Man-caused.

MR. DE LAPP: That doesn't mean they are deliberate by any means, no.

SENATOR BROWN: Do you have any idea whether they are intentional or by accident, what the percentage is?

MR. DE LAPP: Oh, the percentage is far more--let's say by the careless smoker or--

SENATOR BROWN: That is what you call accidental?

MR. DE LAPP: That is true, but there is a percentage that deliberately set fires, and as Chief Miller indicated this morning we have had perhaps more of these fires than he has. Unfortunately these fellows that set fires will set them when we have these adverse weather conditions and in a place where they will make a run and there is where the large costly fire have come



from, most of them.

SENATOR BROWN: Has there been any prosecution of those people that did that?

MR. DE LAPP: If we can get them. We haven't been able to get them. Our record on apprehending that type of person has been not too good because it is more difficult from my own experience, and there are men in this room far more experienced than I am, that it is more difficult to make an arson case than it is a murder case.

SENATOR BROWN: Arson, as I understand it, is a felony.

SENATOR CAMERON: Yes.

MR. DE LAPP: It is getting the evidence and convicting them. When you have so many people running around the country down there it is extremely difficult to pick them up.

SENATOR BROWN: The thing I wanted to get at, if you know they are accidental, why they might be entitled to a little leniency, but the people that do it intentionally, I think they should pay for it.

MR. DE LAPP: That is correct.

SENATOR BROWN: I wanted to know how many of those fellows have been prosecuted.

MR. DE LAPP: Well, in the county--I don't have our statistics with us, but we have had several cases in the past five years that we have successfully prosecuted, but most of them have gotten 180 days, something like that, in jail. The

number of people, and there must be several that have set these bad fires, we just have not caught up with them.

CHAIRMAN WILLIAMS: Any other questions?

SENATOR BROWN: I was going to ask him where they do it intentionally, do you know any reason why they do it intentionally? Is it because they have been informed somebody wants to burn them out or something like that or just for the sake of seeing a fire burn?

MR. DE LAPP: Senator, that is a difficult thing. I think you can get into the psycho, you can get into the sexual psycho, and you can get into the fellow that has an ego that wants to be recognized within himself. That is, he thinks, "I'm a big man now." The other fellow just has the desire to see a fire. He wants to see people go to a fire. It is just a thrill and excitement and some of it I think is pure orneriness.

CHAIRMAN WILLIAMS: Any other questions?

SENATOR QUICK: I have a question, please. Chief, on this fire down there in Los Angeles County, this long last big one they had, as far as I understand, nobody knows how that particular fire started.

MR. DE LAPP: Which fires are you referring to?

SENATOR QUICK: This last one you had two or three weeks ago.

MR. DE LAPP: Well, there were two at the same time, one was the fire Chief Miller talked about in Bel Air.

SENATOR QUICK: Well, say both of them. They were

going more or less at the same time, were they not?

MR. DE LAPP: That is correct.

SENATOR QUICK: Do you have any idea how those fires started?

MR. DE LAPP: Chief Miller explained one here. He thinks he knows how it started. The second fire which burned into the county and back into the city, we haven't any idea. We think that the pattern is there in the same area that was there several years ago. When you get one fire, either that day or some time the next day you get another fire under these bad weather conditions. Our guess would be that somebody touched it off.

SENATOR QUICK: But you did have very unfavorable weather conditions?

MR. DE LAPP: Absolutely, and that matter remains pretty solid on these big fires. We get these unfavorable weather conditions and when you get a fire, regardless of how the first one starts, then generally we can look for one or two more.

SENATOR QUICK: Do you have any idea, any definite figure, have you been able to arrive at one as to the cost to fight those fires down there, the two fires?

MR. DE LAPP: No, sir, I don't know. I know within the County of Los Angeles, the additional appropriations over and above our regular budget will probably cost us close to half a million dollars just on our one fire.

SENATOR QUICK: Are you stronger for fighting fire

than you are for trying to prevent fires? I would like to have your viewpoint on that.

MR. DE LAPP: No, sir, I'm very strong for fire prevention provided it is the right type of fire prevention. By that I mean--

SENATOR QUICK: What would be your viewpoint on fire prevention in your particular area?

MR. DE LAPP: Well, it is so broad a field I don't think I'm qualified to nail it right down, but I do think some of the things I have been talking about here as to education, laws, more patrolmen, closures, removal of hazards along roads, and by that I mean clearing along the roadsides, restriction of smoking to certain areas--I think those are all part of it.

SENATOR QUICK: You are very strongly in favor of the closure law regulations that are proposed to prevent smoking or building fires in certain areas at certain times?

MR. DE LAPP: Yes, sir.

SENATOR QUICK: And how do you feel about the control burning?

MR. DE LAPP: Well, if I understand you correctly, control burning is something that is done under proper supervision and under a permit and is done for a purpose. Now, I could perhaps talk an hour here on control burning. I think it has its place and it has its value provided that afterwards that land is managed right and it is put into some productivity that it wasn't into before. But if you want a positive answer from



me on control burning as the term is loosely used to prevent other fires from becoming large or burning, I don't go for that.

CHAIRMAN WILLIAMS: Any other questions? Thank you very much. We appreciate having you here and having your testimony.

MR. DE LAPP: I had one or two things more.

CHAIRMAN WILLIAMS: Go ahead and finish your statement then.

MR. DE LAPP: I probably said about enough. One of the things that we have tried to do down there is to work through administrative procedures and through certain ordinances to overcome some of this. I just wanted to read a sentence here from our general land management--watershed areas in the statement Chief Klinger has made. "Fire protection in the State of California has not been given nearly as much consideration in land use planning and subsequent zoning as is necessary to protect life and property from fire." Now, we think that this is a basis down there of where we had this population expansion into our area in there and what you can do with that area in a "W" zone. We also have one important committee which the Board of Supervisors has put up through administrative procedure. That is our Subdivision Committee. Now, on that there is a representative of the fire department, road school districts, flood control, recreation, county engineers and others. All proposed subdivisions and other land uses are submitted to this committee. The department

has a man sitting on that committee that is qualified both in watershed and structural fires and at the time that this proposed tract comes up, the prescription is written there as to what can be done in there. For instance, if this subdivision is built, and I'm talking mainly about our mountainous areas, in or adjacent to the mountainous area, they may require as has been frequently done an access road behind that subdivision which is not open to the public, so that we can work on that in suppression of fire. The design of that subdivision has to conform so that reasonable fire protection can be given.

We have another committee that also works on this created by the Board of Supervisors and that is called a Foothill and Mountain Committee and it is advisory to the Planning Commission. Now, one thing that this committee has tried to do, and this is part of the problem down there in the county area as well as perhaps in some of the cities, is, dependent upon the terrain and upon the slope of that terrain, whether 80 percent or 90 percent of your area is over 10 percent slope, then maybe you are only allowed two or three lots per acre and the rest of it you can cut it down, I mean you are allowed 6500 square feet so that that committee is now trying to work out, and it has worked out pretty well some of the requirements that were mentioned here this morning to cut down this congestion in building in this high hazardous area.

Another thing that we have had in effect that the Board of Supervisors passed and it became effective the first of this

year, is the County Water Ordinance. Now, it took over a year to get that County Water Ordinance. It was created by a committee appointed by the Board of Supervisors and this committee can now prescribe for any rehabilitation extension or new subdivision. It can prescribe the fire flows which is set by the fire department; in other words, the amount of water that has to be within that area, and if it is a single area, or I mean a single place like back in the mountains somewheres, we can so prescribe the amount of water they have to have. We think that this is going to help overcome part of our problem. Our Los Angeles County Watershed Commission, and this is our final commission, was created in 1954 by the Board of Supervisors. There are 16 foothill cities represented on that, 5 unincorporated areas and there are 14 other people on that commission. This commission advises the Board of Supervisors. It works with the city, it works with the State, with the Federal government and with the county in proper fire protection and management of our watersheds.

Two weeks ago tomorrow this commission--let me say first, this commission had the Federal government, United States Forest Service and ourselves and we tied in with some of the cities, work out and bring up to date our watershed fire protection plan. Two weeks ago tomorrow the Board of Supervisors approved this plan which will spread over a 10-year period and at today's price will run us 6-and-a-quarter million dollars, and the County of Los Angeles is now spending alone out of our general fund about 3 million dollars for watershed fire protection. That doesn't

consider all of the cities or structural problems.

I'm glad to have had this chance to say these words.

CHAIRMAN WILLIAMS: Thank you very much, Mr. DeLapp. We are going to stand in recess for 5 minutes for the benefit of the Reporter.

(Thereupon a recess was taken.)

CHAIRMAN WILLIAMS: The Committee will please be in order. Mr. W. F. Williams, National Board of Fire Underwriters. Will you come forward, please, and you have some people with you. They may take seats here any place they like. Mr. Williams, would you please introduce for the record these people with you and give their official position for the record as well as your own, please.

MR. WILLIAMS: Yes, sir. First, I'm W. F. Williams representing the National Board of Fire Underwriters. The gentleman sitting right here is Loren Bush, Chief Engineer of the Pacific Fire Rating Bureau and also through a very interesting and I think helpful coincidence, President of the National Fire Protection Association which is a nation-wide organization made up of business interests and individuals, fire departments and various civic and governmental groups nation-wide interested in fire protection and fire prevention. The gentleman on his left is Mr. Carl Weirs who is our Assistant Chief Engineer of the National Board whose responsibilities are primarily those of rating; in other words, measuring the fire protection facilities of the cities over 25,000 in the eight western states, ten western states; and the other gentleman is Mr. Chris Hansen who is Acting Manager



of the schedule department of the Pacific Fire Rating Bureau.

I think my purpose can best be served here by endorsing almost entirely those things which have just been said by Chief Miller and Captain DeLapp. Industry is very much concerned about the tendencies in some areas, particularly this brush fire area of Southern California which would make fire insurance almost like life insurance. The principle of fire insurance is to spread the risk of losses of many people over a wide enough area so that the few actually who have the losses don't have to bear them alone. But you don't assume that every house is going to burn down for sure. In life insurance you do, and of course the rating problem and everything is quite different. When you get these areas, these brush areas of Southern California, it is almost a situation now where it isn't a question of which house is going to burn, it is just a question of when and this presents some economic problems in rating and some very practical ones that just make it impossible to consider insurance unless you consider with it the things that will tend to lessen the likelihood of a fire starting; and secondly if a fire should start the things that will lessen the likelihood of its spreading, third, the things that will make it possible for the people who fight fires to do their job effectively, and wrapped up in all of this is something that impressed me very much from Chief Miller's comments a few minutes ago. This brush fire was spectacular in millions of dollars and homes and numbers of homes burned, but there isn't a day goes by that you don't pick up a paper and read

about lives lost, and we know through the work done by these three gentlemen and the many hours in similar work throughout the country from our fire insurance studies, that you can reduce the likelihood of fires starting through law enforcement and through of course having the proper laws in the first place, and then secondly giving the fire fighter the material and the people with which to fight a fire.

I don't see any point in my extending my statement. I think our purpose could best be served if the Committee has any questions to ask of these three experts here.

CHAIRMAN WILLIAMS: Let me ask you a question. Any of you gentlemen that want to can answer it. Let's take that fire down at Bel Air. You could stop a man by ordinance from building his home right in the middle of a forest, we'll say, and having brush all around it. You could do that by ordinance, couldn't you? You don't need a State law for that. All right, assuming that you have done that, you have stopped him and he has the brush out from around his house. After that brush grows back, what is going to make him keep it cleared out? Is it going to be you people or is it going to be the local ordinance or what? Is it going to be the insurance rate you are going to put on him, the fire insurance premium that is going to force him to keep that brush cleared out from around his house?

MR. BUSH: Well, Senator, I think probably I get your point. I think that through the pocketbook is probably the best way to get at the man's reactions, and possibly through

higher rates, through the brush exposure might be one approach. As you know, just recently we put on a surcharge in the brush areas, and quite frankly, that was the purpose, was to see if we couldn't get better conditions, not to get more premiums, but to get better conditions and keep a clearance. If we could do it that way, why that wouldn't be the first time that the insurance companies have used that method to get better conditions. Of course, if we can get some help with local enforcement, so much the better. I think that is important, too. And to me it is quite significant, as I told the boys, that Senators are interested in this problem, and I think it is highly commendable that you are looking into it and seeing if there is some way that the state can take some steps to improve the situation in the brush areas of California.

SENATOR CAMERON: Whoever can answer, have you or your organization prepared any sections or codes or model ordinances in this field or have you gone that far?

MR. BUSH: No, Senator, not in that field.

SENATOR CAMERON: It was recommended by one of the witnesses that perhaps a draft of a model ordinance might be wise so that local government could adopt it or what portion of it it wanted to.

MR. BUSH: Yes. Of course, through the National Board and probably they could answer this better, we do have suggested fire prevention ordinances, but they are not specifically adapted to the brush areas.

SENATOR CAMERON: Do they cover that fact, though?

MR. BUSH: They do cover many of the hazards that are common to the brush areas, but it isn't pointed out the brush area.

SENATOR CAMERON: I wonder if we could get a copy for the Committee?

MR. BUSH: I'm sure those would be available for you. Mr. Weirs can do that one.

MR. WEIRS: Be very happy to.

CHAIRMAN WILLIAMS: All right. Thank you very much. Any other questions of any of these witnesses? I think where the State of California, at least where this Committee gets involved in this primarily is to be sure that we don't load an area, a county or a city down with a lot of laws which cost money only to have that city or county come back and say, well now, you cost us all this money, just give it to us and we will take care of it, because we get criticized quite often for sticking our nose in local business and local problems. So that was one of the reasons why I think that the Committee asked some of these questions which were directed at that situation. You people, of course work in this field and can give us some very valuable assistance, if not now, later on when we get to drafting any kind of legislation. We want to be sure we know where we are going. I think that is vital to us, that we don't get ourselves out too far on a limb.

MR. BUSH: I can assure you, Senator, both our



organizations will be happy to help you any way we can.

CHAIRMAN WILLIAMS: I know that and I appreciate having you gentlemen here and having your testimony. Thank you very much. Did any of the gentlemen have any further statements to make? If not, thank you very much. We appreciate having you here and having your testimony. Mr. J. D. Procter, and I believe there is a Mr. Curry and a Mr. Jack Mitchell connected with Mr. Procter. Would they come up, please? I don't know who is going to testify so I will have them all come up anyway.

MR. PROCTER: While they are bringing their equipment up, if you don't mind, I'll say a little bit.

CHAIRMAN WILLIAMS: Yes, would you give your name and your official position for the record?

MR. PROCTER: My name is J. D. Procter. I represent the Northern California Conservation and Wildlife Group. I am from Scott Valley, not the Scott Valley in Lake County, but in Siskiyou County. I want to say this to you gentlemen here who have been sitting here this afternoon and this morning listening to this testimony, boy, you got problems. The thoughts that I have in my mind are so radically different from the testimony given from the County of Los Angeles, that it is pitiful. There are different problems altogether. How you fellows are going to analyze all this problem and come up with any kind of set of rules or regulations applicable to all these different areas is something that I really wonder about.

CHAIRMAN WILLIAMS: You don't think it is impossible, do you?

MR. PROCTER: No.

CHAIRMAN WILLIAMS: You think we better do something?

MR. PROCTER: I don't think anything is impossible.

I tell you up in Scott Valley in 1955, I think it was, we had a fire. I have heard here this afternoon about all of the modern methods in putting out fires. I'm well-acquainted with them because where I live in Scott Valley there are forests all around us and these modern methods work good most of the time, but whenever you get a set of conditions, humidity, fuel, that piles up and then it gets touched off, it doesn't make any difference how it gets touched off, it is out of control and it is going to stay out of control until such time as nature itself puts it out through lack of fuel or rain or otherwise.

In that 1955 fire we burned over millions of acres, I don't know how many. I was there. I know, and it went out. Helicopters were grounded, the planes were grounded, we were right back to the pick and shovel and the horse because all of the smoke overhead was so thick that the airplanes and those things couldn't operate. So we were back to manpower again.

Now, in our area, as we see it and I say "we", because in Scott Valley it is an accepted fact--I'm sorry others are not here today to be heard because we didn't know about this meeting. I only got onto it last night. But we are making moves toward reduction of fuel. We have so much fuel built up in our forests that

any time conditions are right, the humidity is right, it will create its own wind. We don't need a wind. It's going to go up in smoke and there isn't anything to stop it, and we feel that the reduction of fuel is the only logical answer.

Now, I wish that whatever time I have left or that I might use--I would like to present it to these fellows. They have pictures here. They have done a lot of research. They have equipment here to show you some pictures. As I say, I only got out here last night and I'm not really prepared to give you the word.

CHAIRMAN WILLIAMS: I wonder if you would introduce them and give their official position for the record?

MR. PROCTER: I'll tell you, I would rather they introduce themselves because I only met them this morning. Thank you, Gentlemen.

CHAIRMAN WILLIAMS: Thank you, Mr. Procter. Now, would you give your name?

MR. MITCHELL: I am Jack Mitchell, representing the Sportsmen's Council of the Redwood Empire.

CHAIRMAN WILLIAMS: We have you down here as Ukiah Rod and Gun Club.

MR. MITCHELL: That's all the same.

CHAIRMAN WILLIAMS: What about the other gentleman?

MR. MITCHELL: That is Mr. Maurice Curry, who is representing also the Konacti Rod and Gun Club and he is also representing the Northern Counties Wildlife Conservation Association, and in the absence of one of our speakers here today he

is speaking for the United Humane Front and Pines to Palms Wildlife Committee. Dr. Kolisch can't be here. Charles Bull can't be here and Ralph Renner can't be here, so Maurice Curry will speak for them. I'll represent Ukiah Rod and Gun Club and the Sportsmen's Council of Redwood Empire.

CHAIRMAN WILLIAMS: All right, you proceed.

MR. MITCHELL: This is a short report, Gentlemen. We are going to make it as short as we can because time is limited and we have heard a lot here today. I want to tell you before we start in the reason that this has been held and the reason why we are bringing in this report is because we are not satisfied with what has gone on in the Federal and State Division of Forestry. There is nothing personal. I want you to understand and I want them to understand there is nothing personal. This is a tentative report to the Legislative Interim Committees who study control burning in California.

In conformance with Senate Resolution No. 120 and its concurrent Assembly Resolution as set up in the 1961 Legislature, this report has been worked on by a Committee of the Sportsmen's Council of the Redwood Empire for the past year and a half. The final draft has not been reported back to the SCRE for approval yet, but this tentative final draft is presented at this time, because the SCRE does not meet until December. This committee, I'll tell you this committee was charged with the duty of bringing back a report to the Legislature on how to reduce wildfire hazard, improve wildlife habitat and livestock range, and we should also



have added to that water.

This tentative draft prepared by Jared H. Hendricks, Lakeport, Secretary of SCRE Control Burning Committee for presentation by Jack Mitchell, Potter Valley committee member. Now, I would like to digress just a little bit here in a few things. After 50 or 60 years of fire suppression, fire suppression has only created an amount of fire hazard and a change is needed if we are to stay solvent and maintain our natural resources. Fire hazard is not the people using the public domain, but the hazard is the lack of removing of fire hazard accumulating by not burning. Can you find a company, industry, house owner, who creates, maintains and protects a fire hazard and then spends millions of dollars of taxpayers' money for the so-called fire suppression tools and then sits by and waits for a fire to start? It generally is then too late. Now, I will go into our report. It is called "Why Control Burn?"

Both the California Division of Forestry and the United States Forest Service are constantly striving for improved techniques of fire suppression. Both agencies are placing emphasis on fire prevention. We believe these two activities both to be important. However, we feel that control burning as a means of fire prevention should be given more emphasis. Basically, improvements in fire suppression techniques and fire prevention must eventually result in an accumulation of more fuel if not accompanied by a control burning program.

It doesn't seem logical to expect to be able to completely

prevent and suppress all wildfires, particularly as the kindling pile grows. Thus as time goes on with improved techniques of suppression we find fewer large fires, but when one does break loose it will be tremendous and do much more total damage than several smaller ones. In other words, prevention and improved techniques of fire suppression must be accompanied by a program of fuel removal by planned action in order to avoid an accumulation of more fire hazard. The most practical method of removal of this fuel is to burn it with a good control burning program.

You could not kindle a backlog in your fireplace with matches alone. You first obtain paper and kindling and place it by the backlog and then you can get it started burning with one match. Prevention of an accumulation of kindling near our timber and the removal of such an accumulation would eliminate much of the danger to our timber because it would then be very difficult to set a growing tree on fire without kindling to ignite it.

At the same time that this fireproofing is going on game habitat would also be improved. When brush becomes decadent, it is not only a fire hazard but it provides very little browse for deer. Deer are browsers not wood eaters. A good State-wide control burning program will provide more feed for deer on millions of acres in California. At the same the fire hazard is reduced. It also improves the habitat for other wildlife.

We need our water in California for more important uses than supporting decadent brush. When a brush field grows up solid

there is a marked decrease in water flow from springs and streams and many dry up in the summer which formerly ran the year around.

Many of our ranges could support more head of livestock where few are now grazed due to a lack of feed and water. A good control burning program supplemented with other necessary measures results in a better range for livestock.

Many millions of dollars are spent every year in fire suppression and we still have wildfires that do millions of dollars of damage every year. Control burning to break up the brush fields and provide fuel breaks should reduce the size of wildfires with a subsequent reduction in suppression costs and damage to our resources.

That is a little prelude to our statement. Now, we will go into the main part of this, recommendations on law and policy changes for the various public agencies.

#### I. California Division of Forestry

A. That the existing State laws and policies adopted by the State Board of Forestry be amended and changed to:

1. Provide for increased support in reducing fire hazards in wild land areas, and improving wildlife habitat through a greatly accelerated control burning program carried out by the Division of Forestry and landowners.

2. This is the one that is very important. Change the Board of Forestry policy which states that the Division of Forestry shall make direct, immediate and continuing attack on

all uncontrolled fires originating on State responsibility areas to may in line with P. R. Code Section 4164 which states that the Division of Forestry may summarily abate the nuisance by controlling and extinguishing such fire and amend this section to replace and with or.

3. Establish some type of State liability insurance to cover both control burn permittee and Division of Forestry personnel engaged in control burning activities.

4. Provide legal authority and legislative approval to increase Division of Forestry activities in carrying out control burning as follows:

a. Provide for classifying wildland areas in the State for the following purposes: Wildlife habitat improvement, fire hazard reduction, and range improvement for livestock. Establish standards and classify all such lands.

b. Establish a long-range plan for all lands so classified to be burned as soon as economically possible and make this program permanent.

c. Provide the State Forester and his organization the responsibility of deciding what degree of suppression activities should be taken, subject to concurrence of the landowner, on wildfires burning on lands classified for control burning under 4a.

d. Provide funds to increase the State Forester's staff to provide more State-wide leadership in this program: To increase district and ranger unit forces to carry



out the program and coordinate with other agencies.

e. Provide funds to support men and fire control equipment to be used during fall, winter and spring in carrying out control burning activities: This should include the use of conservation camp crews.

f. Intensify the education and public relations program stressing the advantages of control burning.

g. Establish a policy and provide funds to allow the Division of Forestry to make a positive use of Health and Safety Code Section 13055 which makes it lawful for a fire protection agency to use fire to abate fire hazards.

That concludes our suggestions for the recommendations for the California Division of Forestry. Next is our recommendations for the United States Forest Service.

A. The set of operating rules as now set up in general do not require a great change. However, there is a need for a speed-up in implementation and a re-evaluation of some of the interpretations of the existing rules.

B. A reclassification of lands suitable for control burning for wildlife habitat improvement and fire hazard reduction is needed. It is felt that many acres not so classified now should be included.

C. The present policy of putting a higher priority on expenditures for grassland and timber conversions than on wildlife habitat improvement and fire hazard reduction should be re-evaluated. The wildlife habitat improvement acreage is many

times as great, can be improved at a fraction of the cost of the grass and timber conversions, are used by many times the number of people and if given a high priority would result in a much more rapid reduction of the fire hazard in the National forests. If the livestock and timber interests' pressure on our type conversion budget prohibits the transfer of this priority on the existing funds, then additional funds ear-marked specifically for wildlife habitat improvement and fire hazard reduction should be made available.

D. Many firebreaks could be put in much cheaper in the winter by strip burns rather than by tractors in the summer.

E. It is recommended that the size of individual burns and the total annual acreage be of such size as to accomplish many more acres annually than is now being done.

F. A positive long-range master plan for the National forests including the planned reburning of many brushland areas every 15 years or so should be worked out and adopted.

G. Provide the Regional Forester and his organization the responsibility of deciding what degree of suppression activities should be taken, subject to concurrence of the landowner, on wildfires burning on lands which have been classified as suitable for control burning within the National forests.

H. The National forests policy on the burning of brush underneath the timber in the winter should be re-examined in the light of work done by Dr. Biswell of the University of California.

I. Plans to coordinate on specific burns with the BLM

and CDF on overlapping and adjoining lands should be broadened and implemented.

J. The entire type conversion program of control burning should be speeded up immensely.

K. The USFS should broaden its educational and public relations program as to the value of a control burning program. This greatly strengthened program of publicity should be coordinated with other public agencies.

Now, we will move over to the Bureau of Land Management.

A. Provide additional funds and personnel in the budget for game habitat improvement, control burning and to expand the range conservation and improvement program.

B. The BLM should coordinate with the CDF, the USFS, the public land permittees and adjoining landowners in implementing the CDF master control burn for the State and enter into a contract with the CDF to have the CDF do the control burning on the BLM land where no one else is able to do so.

C. Work with the CDF in classifying all BLM lands as to their suitability for control burning for each of the following purposes: Wildlife habitat improvement, fire hazard reduction and livestock range improvement.

D. Help to establish more cooperative type of control burns on BLM lands by working closely with county control committees, rod and gun clubs, public land permittees and soil conservation districts.

E. Work with the Department of Fish & Game and CDF in

classification of lands as to suitability for control burning for wildlife habitat improvement.

Now, we will step next to the Department of Fish & Game.

A. The Department should adopt a policy where practical sized burns are recommended. On Fish & Game-managed areas, it is recommended that the size of the individual burns and the total yearly acreage burned be increased considerably over that being practised now.

B. The Department should also recognize and classify deer range areas throughout the State which need control burning.

C. When a brush area has grown up to an unpalatable and unavailable condition with very few deer per square mile, the range improvement aspect of deer management should be given a high priority.

D. It is the recommendation of this committee that the Department of Fish & Game recognize and publicize the importance of control burning in game habitat improvement

Now, Gentlemen, that is an outline of what we have here. We have recommendations for the Committee on methods and techniques and costs which I think you can look over yourselves as you wish. We have recommendations on improvement of the wildlife habitat and the hunting opportunities which also you can take into your consideration. Another is other benefits of wildlife habitat improvement burns such as less brush and more grass and forests, control burning as a method of fire prevention and



such. You may all look over those because we have some more here that I think is very necessary. That concludes my part of it.

CHAIRMAN WILLIAMS: Now, do the other gentlemen want to testify, too? Mr. Maurice Curry, you come forward and give your name and who you represent for the record.

MR. CURRY: My name is Maurice Curry and I am from Lakeport, California. I am a Director of the Konacti Rod and Gun Club, a Director of the Northern Counties Wildlife Conservation Association, and a Director of the United Humane Front. I'm not too good at explaining myself and I figure these pictures I have or photographs will do a better job.

CHAIRMAN WILLIAMS: Is this a prepared statement that you have? This is your statement here?

MR. CURRY: That is right.

CHAIRMAN WILLIAMS: Your name is not on it that I could find and I wondered who gave it to me.

MR. CURRY: I should have signed it. First of all, I endorse in entirety this report of the Sportsmens' Council of the Redwood Empire Control Burning Committee. I feel there should be something done to alleviate these terrible fire conditions that we have in our State and for that reason I feel that this is essential.

As a life-long hunter, fisherman and outdoorsman of California, I have noted the hills of our State become choked with higher and higher brush fields and I'll show you what I mean.

(Showing a slide) Now, that brush that you see there, Gentlemen, is chemise brush that along with oak brush comprises about 80 percent of our Lake County area. You will note there is no grass underneath it. The brush shades out the area leaving it so that the grass cannot grow. Therefore we have a high erosion in that kind of condition. There is a lot of brush but no grass underneath it to hold the soil.

SENATOR BEGOVICH: What elevation is this?

MR. CURRY: 1200 to 1300 feet. It is a Mediterranean type of condition we have here. Now, I presume that is the type of brush that they have in the southern part of the State and other parts, but as to their handling their conditions down there, I won't go into them because I think they know better in their area how to do it than we do up in Lake County. This pertains to our area in the northern part of California, is what I'm getting at.

The policies of our Forestry agencies have been to place more and more emphasis on fire suppression and I'm glad to see this Committee holding a hearing on fire prevention because I feel one of the best tools of fire prevention is not being given the proper amount of attention. What I mean is this control burning. I here refer to control burning for the purposes of removing large accumulated brush fire hazard and providing fire breaks in our large brush fields and also to clean up the trash that is accumulating beneath our timber. I myself have had considerable experience in control burning while helping the

farmers in Scott Valley in Lake County solve a crop degradation problem by deer. We have control-burned several thousand acres to provide deer feed, but at the same time have alleviated a big fire hazard. I'll show you some of those pictures just to illustrate what we have here. This doesn't pertain to fire prevention, but this is what brought on the program of control burning which resulted in several thousand acres of brushland adjacent to these that are being burned. We removed that brush with fire so that the deer would move out of the area and not leave the trees in this condition, and our plan has been, as far as I can see, 100 percent perfect. This program started in 1955. We put our burns in at that time. Deer have left the orchards and gone to the mountains where we have put the fires in. I'll show you one of the burns here.

This will show one of the burns there approximately 450 acres that we put in.

CHAIRMAN WILLIAMS: Where is the burn, up on the high part of the mountain?

MR. CURRY: That is right. You can see the darkened condition.

CHAIRMAN WILLIAMS: The dark blue?

MR. CURRY: Above the grass. You will note that we could not go along with the policy of making a huge burn that just covers everything. We feel that isn't right because primarily we are burning this for deer feed, improving the range for wildlife and some domesticated stock. We leave intermittent

patches of cover and brush, burned brush I mean, and by burning we also noted that the water tables come up immensely.

CHAIRMAN WILLIAMS: Let me ask you a question. You are burning the brush to get rid of it so the grass will come up, but deer normally don't eat grass. They eat browse.

MR. CURRY: In most cases, deer eat browse, that is true. Primarily I would say your deer are browse eaters. When they have good browse they will eat it year-round. However, in the wintertime I have noted when the browse is decadent like in the first picture you saw, no live browse on it at all, they will go to grass and they stay with that until spring until there is life in the browse again, but primarily we put these burns in as I said before to move the deer back into the mountains and they followed the burns back in.

CHAIRMAN WILLIAMS: Now, tell me one more thing. Are there cattle up in these hills?

MR. CURRY: No.

CHAIRMAN WILLIAMS: No cattle at all?

MR. CURRY: No, this happens to be private land, but the party does not have cattle in it. The ridge on top, on over, is Bureau of Land Management and is part of the recreational area, some 60,000 acres there.

CHAIRMAN WILLIAMS: But if they have cattle, the cattle will get the benefit more than the deer?

MR. CURRY: That is correct, both of them would do very good. That is why I say in improving the range you are



bringing the land alive, making it better for everybody, including the farmer. The Fire Department doesn't have near the job. Our local Fire Department is 100 percent behind us. They don't have the problem of putting out fires here. We have alleviated conditions for them as well as our own. We don't have the deer in our orchards. We have brought up the water tables in our wells and I'm getting away from this burning though actually by saying things like that, but actually it is doing everyone a benefit in the community that I can see.

CHAIRMAN WILLIAMS: All right. You go right ahead.

SENATOR ARNOLD: I would like to ask a question of Mr. Curry. What is that 450 acres?

MR. CURRY: Approximately 450 acres of brush was burned in this burn here.

SENATOR ARNOLD: Then, was grass planted?

MR. CURRY: No grass has been reseeded. You will note that in some of the pictures I will show you in the future here, in a few minutes, progressive pictures taken six months apart, the grass stand comes up in the burns in our area. I believe that it would be better if we did reseed but we haven't the money to do that, but we have not done that.

SENATOR ARNOLD: How long before this picture was taken did the burn take place?

MR. CURRY: The burn took place November 1, 1960, and this picture was taken November 3, 1961.

SENATOR ARNOLD: A year later?

MR. CURRY: Yes.

SENATOR ARNOLD: And the grass immediately came up, or is it grass up there?

MR. CURRY: The next spring the grass started coming up in the burn.

SENATOR ARNOLD: The following spring after the burn?

MR. CURRY: As soon as we had rains. The burn was in November and it wasn't but a month or so until the rains brought the grass back up.

SENATOR ARNOLD: You said several thousand acres. Do you have any plots that were done longer ago than that?

MR. CURRY: We have. I'll show you that. We have gone back for six years. I can show you burns we put in six years ago, and how the deer forage and go right through it.

SENATOR ARNOLD: All right.

MR. CURRY: Now, you will see that burn there, a six-year-old burn in the chemise. You see partially oak along with the chemise and the background way in the back, you will see burns that we put in this last year in the far back as you can see in the mountains. Those have yet to get grass started in them, but I'm sure there will be grass growing in there within a month or so.

CHAIRMAN WILLIAMS: This front part between the bottom of the picture and that fire break or road, whatever it is going up there, is that a burn there?

MR. CURRY: That is a six-year-old burn.

SENATOR ARNOLD: Now, it is covered with brush again?

MR. CURRY: That is correct, and you will note the yellow in between which is the grass that has come up. Down in the canyon and over on the far side there that yellow is where we reburned two years later in 1957. That converts the area from brush to grass. It gives them part grass and part browse, part cover. Primarily I might say again, Gentlemen, that this whole program is aimed at range improvement and that is why we leave part of it open and part of it cover.

SENATOR ARNOLD: Did you make any preparations before you burned? Did you bulldoze or anything of that kind?

MR. CURRY: We didn't use any bulldozers, no. We found that we can go in in the wintertime, January, February and March, in the chemise and make good strip burns. We have made strip burns in widths from 100 to 400 or 500 yards wide and in excess of half a mile long and done it very economically, at very little cost except one man maybe and a hand full of matches. We do that and it makes an excellent place for firebreaking to protect for large fires from coming through. You can go in there and burn the grass out the next summer and the fire couldn't possibly go through there.

SENATOR ARNOLD: What kind of controls did you use on this burning, or did you have to have any controls?

MR. CURRY: Four fellows burned approximately 7,000

acres here. Three of us had back pumps, one jeep, a little wheel tractor and a spray rig to follow along. Primarily the spray rig was used in the grass fires down in the valley.

SENATOR ARNOLD: Now, did you pick a spot where there was natural controls around it?

MR. CURRY: That's for sure. We always do that. We do everything we can to keep from having to do excess work.

SENATOR ARNOLD: Then, did you do anything on this land after the original burns six years ago?

MR. CURRY: No, only one place. As you see, we went back and reburned two years later. That is in the gullies, you can see the grass in there where a fire fingered up in there. Actually what it was an escaped fire that went in two years later. It didn't amount to anything. We didn't bother about trying to control it because we knew it couldn't get any place.

SENATOR ARNOLD: What will happen to this brush area? How long will it take to grow back?

MR. CURRY: I'll show you in the following pictures what will happen. We feel in our area that much of the money, men and equipment, which is being used to suppress fires during the fire season could be better used in the winter months to eliminate much of our fire hazard through a control burning program.

Three years ago an 11,000-acre wildfire swept through the Cow Mountain area, headed towards Scott Valley. We observed this fire run up to our control burns and go out. The Forestry



was in there at that time and in the north part of the area they controlled the fire. But they had no worries in the south part at all because we had several thousand acres of control burns in there and it could not possibly pass them.

SENATOR BROWN: Have you got any of what you call virgin ground that hasn't been burned over?

MR. CURRY: In this area?

SENATOR BROWN: Yes.

MR. CURRY: Yes, there is quite a bit of it. Actually it burns periodically from year to year. Prior to 1940 the farmers and the deer hunters burned it quite frequently to make feed for deer.

SENATOR BROWN: Then, you don't have any virgin ground?

MR. CURRY: Not right in this 60,000-acre plot, no. I believe with the exception of Scott Mountain--I believe that is the only place we have virgin territory that had never been burned.

SENATOR BROWN: What shape is it in? Are there deer browsing there?

MR. CURRY: There was no deer on Scott Mountain. It was mostly live oak. It was higher than your head. You could hardly crawl through it and you were fortunate if you saw a deer track in it. As for the erosion in the areas, we have driven iron stakes in the burned areas and in the unburned areas. We have gone all the way into this program, and we found that there was no appreciable difference in the burned areas or under the burned

areas on the erosion.

SENATOR BROWN: That is the reason I asked the question on erosion.

MR. CURRY: We have three stakes right on the Scott Mountain area and I kind of figured that is what you were getting at.

SENATOR CAMERON: I missed part of it. The vegetation that is growing back, is it the same as you burned down?

MR. CURRY: That is correct.

SENATOR CAMERON: And about how long would you say it takes?

MR. CURRY: I'll show you in these next pictures here. We also observed the California Division of Forestry building roads for three days after this fire was out. This 11,000-acre fire that came through. For three days after that fire was out they had their bulldozers and equipment up there working. Why I cannot say. We feel that the money spent on these roads could better be used in control burning.

I have no idea how much it was, but it is a considerable amount of money. We have taken pictures showing the regrowth of the brush in our control burns. These pictures also show that much grass will grow in these burns without any seeding and I shall show you these right now.

Now, Gentlemen, this chemise was burned November 1. The picture was taken January 3, two months later. You'll note approximately 2 inches of growth on that chemise. You notice

the white board up there with a number 1. That is for 1 foot and it goes up 2 feet and 3 feet. Two months after the burn, and it doesn't show, but in the background there is considerable grass showing already. This is six months after the burn. In this area there are few deer. The deer do not hold the growth back very much. There is about 8 inches or 10 inches of new growth there which would be very desirable and excellent feed for stock and deer. You will note that a bunch of grass is in the background and that area I'll say was not reseeded.

SENATOR ARNOLD: I don't believe I understood you. What is this growth?

MR. CURRY: This is chemise brush. You will note this is the same brush as in the picture taken previously.

SENATOR ARNOLD: You say the deer will forage on this young chemise brush?

MR. CURRY: Definitely, very much so. If you could get up close you could see where all the tips were nipped off by the deer. First of all, we found out that the deer will take the "ice cream" species of the brush first which is more or less pepperwood and things like that, but 80 percent of your growth in this area is chemise and live oak, and this is what they pick on first. They prefer, however, live oak in its early stages to the chemise.

SENATOR ARNOLD: How long will they continue to forage on that?

MR. CURRY: Until it gets out of reach to them.

SENATOR ARNOLD: How long a period of time is that?

MR. CURRY: Depending, of course, upon the deer, how many deer there are, but in most cases it will grow about a foot a year and the deer will hold it back if there are great numbers.

SENATOR ARNOLD: Will they forage on it after it grows beyond a foot?

MR. CURRY: Until they have to stand on their hind legs to reach it they will feed off it.

SENATOR ARNOLD: I have another question then. If the deer feed on this brush, why is it necessary to burn it?

MR. CURRY: Because of its tremendous growth and the deer can't possibly keep up to it. If you make large enough burns like we made this 450-acre burn, the deer can't possibly come in and damage the desirable feed. However, if you make small burns, only 50 or 60 acres, the deer will come in and kill the brush right back and then you will have manzanita and undesirable species of brush grow up that the deer won't feed on. That is why we make bigger burns and that is why we suggest making larger burns so the deer will not come back and kill out the desirable species of brush.

SENATOR ARNOLD: What happened in this spot that you burned six years ago?

MR. CURRY: It grew up to where it is now approximately 2 feet high. And it will probably be another five or



six years before it will have to be burned over again. However, at that time when it gets to the height of where the deer cannot get to it, we intend to go through and burn it over again and go right back to the way you saw it in the first picture and it will make very desirable feed. As we are doing this, however, the numbers of deer are increasing immensely. It makes better hunting pleasure for everybody and the deer help to hold the browse back so we don't have to reburn it too soon. It all works together.

SENATOR BROWN: You think the deer don't feed on manzanita?

MR. CURRY: To some extent, yes. They will to some extent, but only when they can't get better feed. That shows the growth for one year. It is approximately a foot to a foot and a half long. We have also found that when these burns don't cover too large an area in one block there is very little evidence of erosion. I guess I have gone into that.

I now want to tell you we have got also a series of oak pictures which I will go through fast to give you an idea of what they do to oak.

There is live oak at two months. You will note the tips have all been browsed off already by the deer. This is six months of oak growth. You will note it is getting out of hand. There are not enough deer there to hold that back. This is oak growth at one year. It average 3 feet in height which shows a very good fertility of the soil. However, there is one shoot there that goes up beyond that white stake, up to 62 inches in

length. I think that is some kind of a record actually in regrowth of oak.

You will note in the background the abundance of grasses growing in there which has a tendency to hold back the erosion in that area, too. I'll try to make this hasty and get through with it. In an area where good control burning is practiced, the danger of having large destructive fires is minimized. In the first place, when a wildfire breaks out, large accumulations of fuel have already been removed so that the fire won't be as large. Secondly, the control-burned areas provide fine fire-break conditions to fight the fire from.

I'll show you one of these. Now, if the fire was coming over the top of that mountain, it could be very easily handled with that grass down in the bottom there. You can make a back-fire there with no trouble at all and stop it from coming down into the valley. Incidentally, the numbers of deer will increase after these burns and will help slow down the regrowth so that you won't have to reburn as soon as you would without deer in the area.

This picture will show you what I mean. Now, believe it or not, that is live oak one year after the fire went through. That is only about 10 inches high in comparison with the other picture you just saw of from 3 to 5 feet in height. The deer have held that growth back. It is a smaller burn and therefore more deer are prevalent in this area and you can see that the deer do help immensely to hold back the growth so that you don't

have to reburn so soon. We have found that the cost of control burns are not high where only brush is involved providing good judgment is used in selecting terrain and time of year and proper weather conditions.

Thank you very kindly.

CHAIRMAN WILLIAMS: Any questions? Thank you very much. We appreciate having you here and having your testimony. Does the other gentleman with you have a statement to make or does that complete the statement for the three of you?

MR. CURRY: That is right.

CHAIRMAN WILLIAMS: All right, thank you very much. Now, I want to call on Mr. Harry Baker. You give your name and who you represent for the record, Mr. Baker, and then proceed.

MR. BAKER: Harry Baker, from Ahwahnee. Mr. Chairman and Senators, I lived in the area for about 15 years and worked for the United States Forest Service in fire control and fire suppression and worked for the California Division of Forestry in fire control and fire suppression, and I have been fire chief in the little town of Raymond, fire chief of Ahwahnee Sanitarium and fire chief of the little town of Mariposa and the subject of control burns has been kicked around quite a bit pro and con today.

In that Madera County--well, I'll take it in District 4, that is the San Joaquin Division. That represents about six counties, Fresno, Kern, Madera, Mariposa and Tulare, and from 1956 to 1961 inclusive, that is six seasons, we have had about 199 burns. We have burned over 152,000 acres and we don't believe

in just burning one time. We are kind of like Mr. Raymond, that we figure if you run a fire through one time why you create quite a hazard because you get rid of a lot of brush, but you kill a lot of brush that is going to be there next year. It's going to be dead and you have a hazard that is pretty rough.

We try to burn once every three years for a period of at least three burns until it is an area that is pretty well opened up. And that way why we get rid of just about the biggest part of the brush and talking about control burns being pretty hazardous and pretty dangerous to handle, well, I guess they are. But I'll give you these figures as accurate as we can get them.

They may not be right to the acre because that is pretty hard to have. In 1956 Madera County had 12 burns. In these 12 burns they had 10 escapes. An escape is where the Division of Forestry sends their equipment in to help pick up those losses. They have a range improvement truck that they send on practically all our fires if we ask for them and generally we ask for them because we like them. We want that help. They stand by, but these others are where extra equipment had to be called in. But in 1956 on these 10 fires that got away, there were only 96 acres burned so that is not too bad. We didn't like that. We thought we could do better than that.

We figured we could get better lines and have better inspections and do better so in 1957 we had four escapes and burned six acres. That is not six for each burn, but for the four escapes.



In 1958 we didn't have any, and by the way in 1956 we burned over 12,000 acres. In 1957 we burned over 8,000. In 1958 we burned over 7,000 and in 1959 we only burned 1600 with no escapes.

In 1960 we burned over 10,000. We had one escape which was 10 acres.

In 1961, which was this season just passed, it was about as rough as I think we will ever see. It is the roughest I have ever seen and I have been there a long time. We had two burns. We burned over 25 acres on one burn and 3,000 on another. We didn't have any escapes. We had a lot of fight among ourselves whether we would burn it or wouldn't. Some of us were scared and some of us weren't. I was one that was scared, but we felt with this many acres burned, over 150,000, and in Madera County practically all these burns are reseeded--now, some of these are reburns, but in Madera County we try to reseed all the burns.

We figure that it helps stop erosion and in the summer time the first year it will take the moisture--this quick-growing grass will take the moisture out of the ground and discourage seedlings from growing back and regrowth of brush from coming in so bad. We think that with this much brush removed and the miles and miles of fire lines that are built to control these fires, it stands to reason that it is a big help in fire prevention, in fire control, because I notice Mr. Callaghan was giving a report on the Harlow fire. Well, I am right in the middle of the Harlow fire. I was the meat in the sandwich on that. He

said that there had been quite an extensive control burning in this area and there has been, but on Potter Ridge where this fire made its worst run, to my knowledge there hasn't been any control burns in there and he forgot to tell you that on the control burn line just before this fire got to Oakhurst, that is where it was controlled, or the town of Oakhursts would have gone and a lot more buildings would have been burned up. Also on the Nelson Cove fire, the south side of that fire in Madera County was held on an old control-burn line. So these lines are quite a help. Someone said that fire is bad in grass. There is no question about that, but I don't think anybody can say that they can't put a line through a grassy area faster than they can a brushy area. If they can, I would like to have them show me how because it cost us a lot of money to do control burns.

Our purpose is to get grass and water for livestock and get rid of the brush as a fire hazard, too. We were trying to get rid of it. We are not trying to grow it.

SENATOR CAMERON: I gathered you reseeded in grasses mostly?

MR. BAKER: We like the annual grasses. We call them annual. Some call them perennial. It would reseed itself, but it seems to take ahold in our area and grow good.

SENATOR CAMERON: This is pretty low down in elevation?

MR. BAKER: I live at 2700 feet. Now, some of it

is a little higher, from about 1,000 to 3,000 feet on these burns in Madera County.

SENATOR CAMERON: Do you do any in the timber-producing areas?

MR. BAKER: No, this is all brush and range land for cattle grazing and stuff like that. The forest is right above us. There are a few little pines and things like that in some of these areas.

SENATOR CAMERON: It is not commercial stuff?

MR. BAKER: Oh, no. Bull pine, jack pine, some of that. The more we get rid of it the better we like it. We don't want it. In fact, we fall those trees or chop into them and poison them with 2-4-D. We don't want them.

SENATOR CAMERON: You haven't had any experience in control burns where you are raising timber commercially?

MR. BAKER: No, I haven't, but I think that would have to be done on a different scale. The hotter the fire we can get the better we like it. In a control burn we like to have them go in a year ahead of time with a bulldozer. That is what we use mostly, and get all this brush on the ground that we possibly can and let it lay a year if we can and then, brother, we have a good control burn and sometimes we sweat blood, too, but we have been pretty lucky. We have got, I think, one of the best crews in the State and they are not afraid to fight fire.

SENATOR CAMERON: The burning is done on your own

private lands, the owner agrees to this?

MR. BAKER: Oh, absolutely, yes. If the man that is doing the burning doesn't own the land, he has it under lease or something like that, and now we have had burns that aren't followed up. Fellows come in and buy this land and burn it for development and sell it. If we can anticipate that, we won't help him burn and they can't burn alone. We just won't go with him, and we have an inspection committee that goes around when a man wants to burn. This inspection committee goes in there and they look it over and maybe he wants to go one place and we say no, we are not going there, we are afraid of it. You will have to go here or there and if he goes along with us, we go along with him. If he doesn't, we won't burn him.

SENATOR CAMERON: In your area where you reseed in grass and encourage the grass, how long a period is it before you have to burn again?

MR. BAKER: We figure on trying to burn it every three years until we pretty well discourage the brush unless we happen to be in an area where the brush isn't coming back very bad, and then we don't do it.

SENATOR ARNOLD: What type of brush do you have?

MR. BAKER: Live oak and lots of it. We have chapparal, manzanita--I'm not much of a speaker. I don't know too much about this brush, only just what the old hill-billies call it. That's what I am, just a plain old hill-billy. Now, in regard to fire prevention in my area, the local people in



there feel that the State Division of Forestry should have the names of and know the local men who are responsible and capable of leading a fire crew and if necessary make these men State fire wardens. These men should be used to show the personnel where the best places are to put fire lines during a fire and use the local men as leaders as they are often on their own property and know every natural barrier, road or trail and where a bulldozer can get through, especially at night, thereby eliminating losing a lot of time looking for a way through. It is just like going in your house. You know your house better than anybody else and I think a man knows his ranch better than anybody else. I don't think that is being done too much now. Years ago, when I was with the Forest Service and when I was with the State Division of Forestry, we didn't have big crews. The biggest crew I was ever on was four men with a Ford pickup with back pumps and hand tools and we held lots of fires, but as quick as we got to a place, I felt that I knew myself, if I could get the man that lived there, why I had him lead us because there are places I wouldn't know that he would know and our local people thought this would be a pretty important thing to do, and whether we go back to the old fire warden days--when I worked for the State Division of Forestry, why I was the fire warden and I had a pretty little badge, but the only time I got paid was when I was putting out fires. When I saw smoke I didn't wait for someone to tell me. Sometimes I went on horseback, sometimes in my old Dodge. I ran a horse almost to death on

almost the same spot where the Harlow fire started and I beat the fire truck. He had an old beat-up truck and I had a good horse.

SENATOR CAMERON: Maybe we ought to get a few horses.

MR. BAKER: It would help in a lot of places. They use horses in places to pack water in now, and it probably would be better to use the more. They have got these big pumpers. They are good where they can get, but in Madera County they have three good old pumpers, 1948 Dodges, two-wheel drive which carry about 500 gallons of water and there are a lot of times that the fire isn't out where you can just run out there and squirt a little water on it from the highway. You have to get in where it is and those pumpers are never adequate to get there. They never did it to start with.

You can talk about these crews that they have, these boys from correction. I don't know what you call them, prisoners. If they can't be used more to put in control burn lines in the wintertime in off seasons--we are great believers in prevention. I think it was Ben Franklin said an ounce of prevention is worth a pound of cure. If it worked then, I think it would work now.

Instead of spending millions for fire suppression, can't they get the money to spend for fire prevention? There are lots of places, natural barriers where they could put in lines. There was one on this Harlow fire. Now, they are starting to put it in. There are some of the Forestry men in there now, but there

is very little bulldozing work. It is mostly hand work, little stuff to clean out, and they need these Youth Authority boys, but it seems as though they are a hard bunch to get ahold of. I don't know why. They have got them. But when the fire is going then they have got all kinds of money. They try to save money all along and when they get a fire, it's gone. I don't think that is good business. And I don't think any man in his own business would think so either. We talk about fire plans. I think they are a fine thing if they could get them pinned down and get them going and do something with them, just not keep them on paper. Get them in operation. And as I understand, I guess the whole State took a 2.2 percent cut in their budgets and I think in the Forestry Division this amounted to about \$500,000., and I don't know if this was done just before the Nelson Cove fire or after, but the Nelson Cove fire cost the State \$380,000. and the Harlow fire got \$225,000. Well, that is over \$100,000. more than they saved so what did they save the taxpayer besides all the homes and everything else that burned up? It just doesn't make sense. It looks like they would use some of this money for fire prevention.

SENATOR CAMERON: You understand we can't force-- the State doesn't own land in this area and we can't force people to burn.

MR. BAKER: Oh, I don't mean that, and I'll take that back, because I know fellows that won't let the State go on their land and put in fire breaks. We have got one, a very close friend of mine, but this fire break that we are trying

to get in now has taken him right in the middle and I said to him, "Let them go through because if you don't, when another fire starts they are not going to fool with you. You are going to get burned out because I think they have decided to start in backfiring now in time to do some good, and if they get this firebreak in here where it is just a natural, they are going to use it and you are going to be burned out." He says, "Well, it is a chance I'll have to take." But I don't think there are many of those cases. I think in most places they would be very happy to have you put a fire break in, have the State put a fire break through their place so when a wildfire came they could fight it.

SENATOR CAMERON: I meant the control burn.

MR. BAKER: I think that the control burn should stay with the ranchers and it is wonderful to have the help of the State. There's no question about that. Some of the boys in our organization don't like them, but boy, I do. The more help I can get the better I like it because I have worked with the State and I have worked with the Forestry and I know some of the other restrictions, but when you actually need them they are there and they will go. They put out for you and I like them. I want them. But the actual control burn itself I think should stay with the ranchers, in our area anyway. I know that is the way they want it and they are doing a good job. They are burning and getting rid of a lot of brush and they are really accomplishing something. And one thing I think has happened and that is



that the State and the local people are drifting apart. Now, maybe not in all areas, but I think they are in a lot of areas. I know way back years ago when I was State Fire Warden, like I say, I had a saddle horse and you had to have the cooperation of the local people and you did have it, or you couldn't have done anything. When I worked with the Forest Service we had a little Ford pickup, four men, some hand tools and two back pumps and we controlled lots of fires, but it was done with local people. We had their help. I don't know what it is going to take to get that back in a lot of areas. Maybe you could get fire wardens in there again or something to get the cooperation--they will cooperate with you when they have to, but there are a lot of them that don't have their heart in it. They are not wanting it. They don't like it. I know, because I have talked to lots of them. Some of them don't even want the State to control burn, but I think that is stupid. Something needs to be done. Some public relations needs to be done to bring that back and that is not saying anything against the boys that we have in our area because they back them up to the last word, but there is something lacking.

As far as I remember years ago we used to get together the local people and have picnics and go and burn along the roadsides and trim along the roadsides ourselves. But they got to where now they depend on the State. "They will take care of us." The thing of it is I used to know everybody in that country and I think there are 16 people left alive that are there now

that were there when I came there and there are hundreds now and I don't know any of them, and like this gentleman was talking about local people--well, he says up to 30 miles. Well, 30 miles from our place is nearly a foreigner. So I don't know what he calls local people, but they are the ones we can get out and get ahold of when we want them and they are there 100 percent fighting fires. They are with you. So it is a pretty tough problem. Southern California doesn't have the same problem as we do. We don't expect them to look at our situation the way we do, and we are sure not going to try to go down there and tell them how to run their show because we don't know how. But in control burns, there is danger, but I think it is where you control burn and how it is laid out as to how dangerous they are. You have to pick out the area where you work and how and what your dangers are, I think.

Another thing that I think is very very important is-- of course, I don't know so much now because there are lots of people working, but where they are taking all these people and paying them \$2.00 an hour to fight fire, I just wonder if maybe that is such a good thing. Maybe they kind of like to get those \$2.00 I don't know. I got a check from this Harlow fire and that was the first check I got since I was actually on the payroll. I got money for trying to protect my own property. Pretty good.

Getting back to these control burn lines in this Harlow fire, I wasn't going to bring this up, but through Mr. Callaghan's

testimony I thought I would. Now, the Forestry gave me two bulldozers and a truck pumper two-wheel drive. I don't know how many men it had on it, but maybe eight or ten, and I opened up about two miles of control burn line and that line is still holding. It is there. We never lost it, and part of it is right in the head of that fire, so they do do good. There's no question about that if a man handles them right and takes advantage of them. They are a pretty big advantage. Getting back to this old two-wheel drive outfit, there is a hill there that I can make with my station wagon, but the cats had to pull this pumper out. It is pretty rough when you send a crew of boys out with equipment like that.

Getting back to another phase of these control burns, they increase a lot of water. I think you have had this testimony before today, but here are the figures and to the best of my knowledge they are correct. They are from the University of California. It says that the water runoff over a period of one year on a reseeded control burn is increased from 2 to 10 inches. You take that over 150,000 acres, Gentlemen, and that is quite a little bit of water, and I don't know whether they need it in Sacramento, but we sure need it up there and we appreciate it and we have very little erosion. You might think this would cause a lot of erosion, but the only place we have much erosion is where we put in the bulldozer line where it is steep, and any fireman that has any get up and go, he puts water breaks in and he doesn't have erosion. I know this for a fact. In one field in particular

that I have got rented right now we lost practically all our feed in that Harlow fire. I have known this field for over 20 years and I have never known water to hole up in that spring until after that was control burned three or four years ago and right now I have over 20 head of stock in that pasture and the trough is running over all the time and I think that is a pretty important thing. That is not uncommon at all in our country. After control burns water comes up and it really runs, and I think if you go to different ones in the State who have made extensive studies of this they will back those statements up with a lot better figures.

CHAIRMAN WILLIAMS: Let me ask a question. How much longer will your presentation take?

MR. BAKER: I can stop any time. I'm just about through.

CHAIRMAN WILLIAMS: Well, there is one more person I wanted to put on before we did adjourn. You finish your statement.

MR. BAKER: I don't know if it would be better for the State to get some small four-wheel drive rigs, pickups with small pumpers on them, small tanks and pumpers like the control burns have, because we go just about any place that we want to go. We just go places, we go down a lot of places we can't get back, I'll guarantee that, but we go down them. We always figure there is a way out at the other end, but we do go in places it is unbelievable. Maybe if they had some of these little fast rigs



they could get to some of these fires a little faster and replenish the water in these little trucks with their bigger trucks. There is where we are having our trouble, is getting water for these little trucks, but we are getting more springs developed. We are getting more adequate water. We are getting farm ponds to hold water and the situation is getting better. So I don't know whether it would be better to have little trucks or not, but I think that is pretty well what I had to say to you gentlemen.

CHAIRMAN WILLIAMS: Any questions? All right, thank you very much, Mr. Baker. We appreciate having you here and having your testimony. Let me ask, Mr. Morehouse, how long will your presentation take?

MR. MOREHOUSE: Five minutes.

CHAIRMAN WILLIAMS: All right, come forward please and give your name and who you represent. You will be the last witness we will call. After that we will adjourn until 9:30 tomorrow morning. Go ahead, Mr. Morehouse.

MR. MOREHOUSE: Mr. Chairman and Members of the Committee, I agree with a great deal that was said by different people and there is no use repeating anything that was said. I have four points to make. One point is on the fire breaks. In other words, I got an idea while the men from Los Angeles were talking. Your fire breaks up there should be made, as many people have said, should be made. They don't need to be too wide, but they have to be repeated every year, but they can be made with

a bulldozer and I think like they say, 18 million dollars was spent on fighting fire and I think probably if we go up to 50 million dollars on a bond issue or something and put these fire breaks all over the State, because what they are, you can have a backfiring against them and checkerboard the country. Most of our land in the State is not in timber, but I can't see anything wrong with putting up a great deal of money that's to be paid back over a period of years because I feel sure and possibly the Forest Service would back me up on this, that they have spent 18 million dollars out this year for putting out fires, and if they get the breaks in next year, it would be half of that or a fourth of that because when the fire starts then they have somewhere to backfire from all the ridges. I was thinking down in Los Angeles where they can't cut the brush out because of erosion conditions and where it is populated, they can run a pipeline with sprinklers that make their own firebreak and have it turned on by heat. Buildings are now being put in with sprinkler systems to stop it. In other words, all you need is the sprinklers. It might hop over it, but at least there would be another one half a mile further out. In all these places like Bel Air why they could afford to do that. They could lay out a sprinkling system running 4 miles or whatever they want, but I think that would be economically sound to plan ahead to stop these fires, and I think they would be money-saving devices in the long run. I know we can't take 50 million dollars or 100 million dollars out of the budget, but I

think they could do it with a bond issue. Somewhere the fire could be stopped.

The Harlow fire was stopped for a couple of days. If they could have backfired against it, you could have stopped it and I think the sprinkling system would work because the fire will stop as quick as you get water. They say they had 27 million gallons of extra water. Well, 1 million gallons of water in the right place would have stopped the fire. I think it is worth thinking about.

Number 2, the law has to be enforced. In Madera County there is a law that you must clean 20 feet back from your property. We don't do that because we don't think the fire is coming. Anybody that is in an area that is liable to burn should be forced to clear back from their own houses to protect themselves. We all become lax because the fire doesn't come and we think it is never coming.

Number 3, I believe we have lots of trouble because houses burn. The fire went through and a bucket of water could have put the fire out if you were there and lots of people were there, but they had no water because the electricity went off. I think it should be a State law if you are in a fire hazardous place you should have a barrel of water sitting by if you don't have water from gravity flow because when the electricity goes off it goes off because of the fire and for miles around you don't have water. If you had a barrel or there were barrels of water at the right time with a top over it to keep mosquitoes out--it doesn't cost

a lot of money to save a house. Many of the houses were saved with just a small amount of water and I think it should be compulsory. I think it should be considered.

Number 4, I think we should educate the people on how to save a house. I heard so many in the fire talking that where they had a shovel they saved the house. Grass fires go through quickly and then there are little places burning on the porch and they must be encouraged that they can save their places, and I read in the paper where the big fire down in Southern California, where many of the houses were saved because people were up on top watering them down. That must be put across, that you can protect your property.

I said I had four, but I have five things to put across. I think this is very important, that the people who have the authority, who can tell you whether you can go in and save your property should be one that is closest to the situation. In other words, a man who is in charge--I don't know who he was. He wasn't the Forest Service man, but some people were there who told me and I believe it because I know things like this happen. These people were told to evacuate because people in charge became panic stricken and didn't want somebody saying that people burned up. There were so many people who reported down to the committee, the Assembly Committee when we had our meeting down there of how they were within a quarter of a mile of their own house and wanted to go through and the officers in charge, not the Forest Service, but the highway patrol or sheriffs, said, "No, you can't go in," and the people



who wanted to go into their houses--their neighbors right next to them saved their houses because they were there. One man claimed he lost \$60,000, all his life's savings. The mail carrier came in and he said he came in one road from Raymond and he came within half a mile of his house and they wouldn't let him go through. He turned around and went back through Coarse Gold and took 45 minutes and came back and he got through to the other places but he was 10 minutes late of saving his house. In other words, all I'm trying to say is I think the man who is closest to the situation should have the authority to decide whether the man should go in and save his house.

I'm sorry I have to rush through this way, but thank you.

CHAIRMAN WILLIAMS: Thank you. Any questions?

Thank you very much. We appreciate having you here, Mr. Morehouse.

A VOICE: Could I make one request here? I would like to have Mr. Carl Twisselman of the Cattlemen's Association on for seven minutes to give his statement so those of us who can't be here tomorrow can hear it.

CHAIRMAN WILLIAMS: Come up, Mr. Twisselman.

MR. TWISSELMAN: I only have 12 copies to give the Committee. If you would like to give those gentlemen a copy, I'll wait until morning.

CHAIRMAN WILLIAMS: How long does your presentation take?

MR. TWISSELMAN: Eight minutes.

CHAIRMAN WILLIAMS: Go ahead. Tomorrow morning there

is going to be another hearing as I understand upstairs dealing with this gold question. Some of the Committee I think have to go up there and some of the people that are here in the room may want to go up and hear part of that, but we will take up at 9:30 tomorrow morning anyway. Go ahead, Mr. Twisselman.

MR. TWISSELMAN: My name is Carl Twisselman, First Vice President, California Cattlemen's Association for which I speak today. I am also past chairman of the association's Range Improvement Committee and a member of the Range Improvement Advisory Committee to the State Board of Forestry.

We wish to thank you for the opportunity to appear before you to express our thinking relating to fire prevention on the wildlands of California.

Production of cattle and calves is a very important segment of California's \$3.2 billion agricultural income and the highest cash commodity in 1960.

Production of livestock is the major economic use of much of our wildlands, and relies on grazing from more than 44 million acres. The management of these wildlands is of vital interest to the cattle people.

An expanding population, improved methods of transportation and the increase of public access roads along with an increase in hazardous fuel, has created a wildfire hazard that has grown beyond reasonable economic control. The time is late for the people of California to realize and understand the wildfire hazard in California and promote accelerated programs of fire

hazard reduction.

The open grasslands do not pose the problem that our brush and timberlands do. Better organization of landowners and cooperation between them and governmental and other agencies in reducing fire hazards along roads and rights-of-way is needed in many grassland areas.

Promotion of local landowner committees to work with governmental agencies has proven very successful and should be encouraged.

The California Cattlemen's Association has urged all county Cattlemen's Associations to take an active part in assisting in the organization of such committees.

Our brush and timberlands make up a large percentage of our wildlands and are of greatest concern to our cattle people. Population growth is rapidly depleting our acreage of the better agricultural lands, and livestock must make greater use of the back country.

The Legislature realized this need and passed enabling legislation authorizing the California Division of Forestry to issue permits for controlled burning of brush-covered land in areas where fire protection is the Division's responsibility. It has been demonstrated through research and actual practice that removal of non-productive brush debris and slash from publicly or privately owned lands by controlled burning is the best and most economical method of brush removal to reduce the fire hazard and suppress costs incident to uncontrolled fires, increase

forage for livestock and wildlife, and increase the water supply.

Many brush areas have been protected from fire for many years and have become fire hazards. Where these lands adjoin public lands or timber lands, an individual landowner hesitates to accept the liability of a control burn and the hazard continues to grow.

We believe that there is an urgent need for greater participation in controlled burning programs by State and Federal agencies. Moneys allocated to wildfire suppression should be used in suppressing an escape fire during or following a controlled burn under a valid burning permit.

Any funds made available to any agency for fire hazard reduction should also be made available to assist ranchers and landowners in a cooperative program upon lands where the expenditure of such funds would accrue in whole or in part to the benefits of the general public by the reduction in fire hazard, thereby protecting recreational areas, wildlife, timber, and resulting in water conservation. One example of this would be the clearing of a buffer strip or fuel break between all brush lands and timber lands.

The fuel break program now in progress in Southern California where brush conversion is not practical in much of the area, should be greatly accelerated, and extended State-wide, to break up vast fields of brush that cause the damaging and costly wildfires, and would encourage greater use of control burning.



The Legislature has given fire control agencies the right to burn for fire hazard reduction, and we believe that they could exercise this right in cooperation with landowners to much greater advantage.

Reseeding of wildfires should be continued and expanded where practical. Fire guards or fuel breaks should be maintained on areas burned by wildfire or controlled burns, where needed.

Public education and information has, for the most part, been directed toward the evils of fire. Greater effort should be used to inform the public of the fire hazard we have created and the necessity of reducing the quantity and quality of the fuel, and the many advantages gained therefrom. We should encourage greater contributions from water and wild life management agencies. Recreation agencies should be cooperators around recreation areas and in producing new recreational areas on public lands properly planned for reduction of wildfires.

In closing, Mr. Chairman, I would like to summarize the cattlemen's feelings toward fire prevention in our wildlands of California. We feel that the people of California have maintained a policy of total fire prevention and control to the extent that we have created a fire hazard condition that will necessitate full cooperation from all of the people to rectify. We believe that increased moneys for fire control agencies, and all available men and equipment, when not actively fighting fires, be used for fire hazard reduction programs.

The recognition and interest that the legislature is

giving this problem is very encouraging to our association, and I wish to assure you that we are ready to help in any way that we can.

Again, we wish to thank you for this opportunity to appear before your Committee on this vital subject of fire prevention.

Thank you.

CHAIRMAN WILLIAMS: Thank you very much, Mr. Twisselman. Any questions of this witness?

SENATOR CAMERON: Will he be back tomorrow?

CHAIRMAN WILLIAMS: No questions. Thank you very much. We appreciate having you here and having your testimony. Now, for the benefit of the ladies and gentlemen in the audience, last Wednesday Senator Jack Hollister passed away which I presume of course most of you know. He was buried last Saturday. Unless there is objection by the Committee, we will adjourn this meeting today out of memory of Jack Hollister and it will be entered in the transcript and his wife will receive a copy of that portion dealing with it. If there is no objection, it will be unanimous. The meeting stands adjourned until 9:30 tomorrow morning.

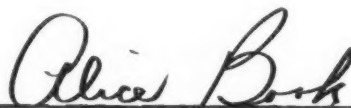
(Thereupon the meeting adjourned for the day.)

## REPORTER'S CERTIFICATE

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This is to certify that I, Alice Book, a Certified Shorthand Reporter, was present at the time and place the foregoing proceedings were heard before the Senate Fact Finding Committee on Natural Resources in the Capitol Building, Sacramento, California, Monday, November 27, 1961, and that as such reporter I did take down said proceedings in shorthand writing, and that thereafter I caused the shorthand writing to be transcribed into longhand typewriting, and that the foregoing pages beginning at the top of page 1 to and including page 196 hereof, constitute a true, complete, accurate and correct transcription of the aforementioned shorthand writing.

Dated this 20th day of December, 1961.



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Certified Shorthand Reporter

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Tuesday, November 28, 1961

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TUESDAY, NOVEMBER 28, 1961  
9:50 A. M.

CHAIRMAN WILLIAMS: The gentleman who is testifying is Norman J. Farrell of the United States Forest Service in San Francisco.

MR. FARRELL: Getting back to our basic theme of this Hearing of Fire Prevention, I will confine my remarks pretty much to fire prevention.

We in the Forest Service feel that fire prevention must be an integral part of every operation that involves forest land. Every action that we take or permit to be taken on forest land adds to or detracts from our ability to protect that area from fire.

Fire prevention is not an activity that can be defined specifically as it consists of many interrelated parts and really has its source in a state of mind. This state of mind must accept that all man caused fires are preventable and that each one represents a prevention failure. A minor number of fires may occur from so called Acts of God or reasons beyond our control but basically those fires started by man or the machines or devices controlled by man are preventable.

To prevent fires we must isolate causes and do something to keep these causes from igniting forest cover. In most cases this means treating the cause in some cases if this is not feasible it requires separating the cause from the fuel. Prohibiting fire works in the National Forests is an example of a measure that separates risk and fuel.

Management practices that introduce high potential

risks into hazardous fuels need to be counter balanced by measures that will offset this risk.

Fire prevention involves prescribing, maintaining and enforcing measures for all activities on forest land with the objective of eliminating man-caused fires.

Prevention of fires is a job of high priority for all Forest Service personnel. Next to actual fire suppression it is the highest priority job for all fire control personnel, district rangers, and timber sale personnel for their respective sale areas as well as foreman and other supervisory officers and their employees on all projects and activities.

Because fire prevention is basic to a successful fire control program it takes a prominent part in all fire control planning. For the past two years the Forest Service has been reanalyzing the fire problem of the National Forest and developing a program to cope with it. The recommended program is based upon a detailed analysis of risks, fuels, weather, accessibility, use, trends of use and industrial development and other factors that have a bearing on fire risk or hazard.

The prevention portion of that recommended program represents the prevention organization necessary to take care of the measured work load. It is not based upon estimates or desires of Forest officers but actual measurements of the job to be done unit by unit.

That reappraisal of the prevention job load shows that a total of 460 prevention firemen are needed to do the job on the National Forests of California. That is an increase of 145 over

the number actually financed in calendar year 1960 when 315 were on the job. You will note that I use the term prevention fireman rather than patrolman. We prefer to use this term rather than patrolman because patrolman implies patrolling or driving around on forest roads. The only time that a patrolman can prevent a fire is when he stops patrolling, gets out of his car and does something with a person, risk or hazard. A prevention fireman has specific jobs to do based upon a detailed plan and his vehicle is merely a means of transporting from one job to the next.

The fire danger rating system provides forest officers with a measure of the relative fire danger each day as determined by weather factors, such as temperature, relative humidity, wind, fuel moisture and condition of vegetation.

The danger rating provides us with a specific management tool that serves as a basis to adjust the fire organization currently as determined by conditions area by area.

An emergency action plan prescribes specific steps that must be taken at given levels of fire danger. This plan not only provides for the placement or adjustment in deployment of men and equipment for suppression but also prescribes the prevention action to be taken as the fire weather becomes more severe.

For instance, when the Burning Index reaches 19, no debris burning fires are permitted on the National Forests and all such fire previously started when the danger was lower must be extinguished.

Timber sale or other industrial activities operating on National Forest land under contract or special use permit are

guided by specific restrictions imposed at different levels of the Burning Index. These restrictions become increasingly more severe as the fire danger goes up. When a Burning Index of 33 is reached, the operations are closed down.

Restrictions or requirements imposed on forest users must be based upon some legal authority. Authority for these actions comes from a number of sources.

Most actions are based upon authority granted by state law or county ordinance. In the Forest Service we have authority of the Regulations of the Secretary of Agriculture which comes from the Congressional Act directing the Secretary to prescribe regulations for the development, administration and protection of National Forest lands. In addition to specific regulations or laws we have a responsibility to include in all contracts or special use permits involving use of National Forest lands, measures that will protect the public interest.

This responsibility and authority to prescribe how National Forest lands are to be used makes it possible and in many cases mandatory to impose more rigid fire prevention requirements than those authorized under specific state law. Clauses in contracts or agreements are binding on the user and if he desires to use public land to build a road, powerline, house or for any other authorized purpose he can do subject to the requirements of the administering agency.

This is the reason why users are sometimes confused by different requirements of the California Division of Forestry and the U. S. Forest Service. We attempt to be as consistent as



possible in our requirements. In some cases there are material differences because of basic differences in the laws or regulations that direct or control the activities, responsibility and authority of state or federal agencies. Many of these differences can be reconciled by the agencies themselves. Some will require legislation.

Statements were presented to an assembly committee hearing held in Fresno a few weeks ago regarding need for basic legislation dealing with clean-up of inflammable fuels around mountain or rural residence. Many counties have such legislation.

Inside the National Forests if the residence is on public land under authority of a Forest Service Special Use Permit the forest officer can prescribe as a condition of the permit that fuels must be cleared to a certain distance. If upon inspection by the prevention man this work has not been completed by the required date he can take action. If a similar residence is located on private land next door and there is no county ordinance or state law, then the prevention man has no legal basis for enforcement. Any clean-up action then can be obtained only by the sales ability of the prevention man.

Some of the primary problems that might be of interest to this committee from the standpoint of possible legislative action are:

1. Clean up requirements for forest residence, commercial or industrial facilities located in fire hazardous areas.
2. Closures or other restrictions placed upon the

public limiting use of hazardous areas during periods of high fire hazard.

3. The ever present problem of deer season coinciding in general with high fire hazard periods.
4. General requirements or lack of controlling restrictions on mountain subdivisions relating to matters such as minimum water supplies, access routes, dead end canyon developments with only one means of access or escape, road standards in relation to free movement of fire equipment, buffer strips or fuel breaks between developments and solid unbroken masses of forest fuels.
5. Debris burning: Stage construction of highways, roads, pipelines, powerlines and similar improvements requiring clearing and burning of debris so that clearing and burning can be accomplished during periods of low fire hazard. Coordination of activities conducted by public agencies such as road or highway departments to schedule or let for contract the most fire hazardous parts of the operation during low hazard months or periods.
6. Disposal requirements for forest slash and debris from land clearing projects.
7. Fire breaks or lack of them along public traveled roads.

A complete list of fire prevention problems would cover many pages. The above are typical of some which provide headaches to forest fire control agencies.

The Forest Service and State Division of Forestry are currently working on a project to develop a uniform set of guidelines that can be used by both agencies in the issuance and administration of burning permits. These guidelines will cover all types of burning from the backyard incinerator to the major projects resulting from extensive clearing projects.

Public education is an important step in all fire prevention programs. Mass media such as the Smokey Bear program, posters, radio and television, newspapers, magazines and public meetings are essential to complete fire prevention. In general the mass media approach conditions the public for acceptance of more specific on the ground prevention action.

The public must be educated to the need for fire prevention, how to prevent fires and creation of a general recognition of the forest fire problem and the citizens' responsibility towards it.

The engineering or analysis phase of fire prevention previously referred to includes a systematic analysis of the problem and what to do about it.

This includes the detailed inventory tabulation and mapping of risks, a program of action for each, assignment of responsibility for each, schedule of inspection dates and follow up action. It also develops the tools of the trade to enable the prevention man to get the job done. It includes inspection check lists for the major classes of risks such as railroads, power lines, sawmills, logging operations, industrial uses of various kinds, recreational developments, and other forest uses. In

order to pin point prevention effort to the particular classes of risks that are resulting in fires a prevention program must be tailored to specific areas.

For instance, the first few days of hunting season always brings large numbers of people into the mountains. This is a regular annual occurrence that is provided for in local prevention plans as is Fourth of July, Labor Day and other peak periods that require special prevention effort. During these periods practically every able bodied man on a National Forest is given a prevention assignment and a territory for which he is responsible. The regular prevention organization is not adequate to provide for a few peak periods so other Forest Officers are detailed to the job during these periods.

Hazard reduction and fuel treatment are integral parts of a comprehensive prevention program. We are undertaking a fuel modification program on a pilot plant basis to determine measures that can best be incorporated into multiple use resource management programs to leave forest areas in the best possible condition from the standpoint of protection from fires. These measures will as developed and tested be included as guidelines to action for all programs. They will involve measures such as possible modification of timber cutting practices at locations strategic from the fire control standpoint, changing the type of vegetative cover in key spots, location of roads, water developments and other improvements and similar measures that influence fire control. In short, the program is designed to obtain maximum coordination of all forest programs with fire control considerations.

We think we are making progress in fire prevention, we know that there is a long way to go before we and other fire protection agencies are on top of the job.

We appreciate the interest of this committee in the problems of fire prevention. We are convinced that the field of intensified fire prevention in all of its ramifications is one of the most essential parts of a successful fire control program in California. I shall be happy to try and answer any questions or provide more details on any part of the Forest Service prevention program.

CHAIRMAN WILLIAMS: Thank you very much. Are there any questions? If not, Mr. Green will you please come forward?

MR. C. E. GREEN: Report concerning fires that occurred on Highway 40 right-of-way during the 1961 fire season.

The facts contained in this report have been compiled from the Solano County Fire Control radio log and from records that are kept by the various fire departments in the County.

Solano County Fire Control is the central dispatch center for all fire units in the County. An accurate record, concerning all fires occurring in the County is kept in the fire control office. These records and those of the fire departments that were involved in the control of the fires that occurred along Highway 40, have been combined to obtain the figures that are being presented. It has been found that there are some differences in the two records, especially for the dates of September 2nd and 3rd. On those dates Solano County experienced the greatest loss of property by fire in its history. The fire



departments in the county answered 54 fire calls in those two days. It was virtually impossible for the department personnel to keep an accurate record of their fire calls on those dates.

As of November 1, 1961, the five fire departments responsible for the highway fire protection have reported a total of 248 fires on the Highway 40 right-of-way. The number of man hours spent on these fires was 1121. Using a base rate of \$3.00 per<sup>man</sup>/hour and \$10.00 per truck per hour the total cost of suppression of fires on the highway right-of-way came to \$8,473.00. At a hearing of the Assembly Interim Committee on Natural Resources, held in Arbuckle on October 17, 1961, it was brought out that the majority of fire departments concerned with highway fires are using a base rate of \$40.00 per hour. The fire officials in Solano County have agreed that the rate of \$10.00 per truck per hour will continue to be the base rate in this county.

Of the 248 fires reported to have originated on Highway 40, only five caused a considerable amount of damage to adjacent property. The combined loss caused by those five fires amounted to approximately \$12,800.00. This includes 270 acres at \$3.00 per acre, seven miles of fence at \$1,000 per mile and several buildings, shrubs and trees, estimated to be worth \$5,000.00.

During the 1960 fire season, approximately 85,000 acres have been damaged by fire in Solano County. The fires originating on Highway 40 caused a very small percentage of this damage.

The members of the fire service in Solano County have received excellent cooperation from the Division of Highway,

Maintenance Division. Through the years, the two agencies have worked together to accomplish the job of protecting the general traveling public on the state highways in Solano County.

It was stated, at the interim committee meeting in Arbuckle, that Mr. Francis Raymond, Chief Forester of the California Division of Forestry, has set up a study of the hazards existing along the state highway system. At the completion of this study he will recommend certain practices to relieve the situation. This study appeared to be acceptable to Mr. Baxter, Chief Engineer of Maintenance of the Division of Highways.

In conclusion, the Solano County Fire Service feels that a solution can be found that will meet with the approval of the agencies concerned.

CHAIRMAN WILLIAMS: All right. Thank you very much. Are there any questions of Mr. Green? If not, Mr. Arnold will you please come forward?

MR. ARNOLD: I am Keith Arnold, Director of the U. S. Forest Service Experiment Station, Berkeley. I am pleased to have this opportunity to present information to you on research progress and needs in forest fire prevention.

Fire prevention is an important part of our responsibility for research in California. For convenience, we have grouped prevention studies in four areas--weather, fuels, man, lightning.

Weather: In 1957 we developed in cooperation with the California Division of Forestry and the U. S. Weather Bureau, a

practical system for rating daily fire danger and seasonal fire potential. This provides three index ratings for each of 142 climatic zones in the State; the ignition index predicts the effects of fire weather on the relative probability of a fire starting and on the potential for spot fires on going fires; the burning index combines with effects of weather on fire spread and fire intensity and estimates the size of the fire-fighting job for individual fires; the fire-load index combines the ignition and burning index numbers to give a measure of the total potential of the fire job faced by the fire-fighting organizations.

Here is the chart which shows these indices at the time of the Harlow Fire which destroyed Ahwahnee and Nipinnawasee. When the ignition index is above 80 the possibility of fire starts and spot fires is critical.

At the time of the Bel Air fire disaster in Southern California the ignition index at the Burbank Station was 95, the burning index 96, and the fire-load index 100.

The Division of Forestry and the Forest Service are developing guidelines for using these indices for issuing and suspending debris burning permits and for controlling other operations in forest and watershed lands which pose special fire hazards. The principal improvement needed now is in the fire weather forecast which goes into the prediction of each index for the next day. The intensity of prevention effort can be geared even more to fire danger.

Fuels: California's forests, watersheds, and rangelands contain the most flammable fuels in the United States. Granted

this flammability is largely controlled by the weather, but until we can control the weather we must do what we can with the fuels. Another cooperative program of the California Division of Forestry, the U. S. Forest Service, and the Los Angeles County Fire Department, is fuelbreak research and development. This project has worked on more than 3,000 acres of fuelbreaks and type conversion projects in Southern California. Its principle objective is to find ways to modify vast expanses of brushfields by establishing a wide strip or block covered with vegetation of low fuel volume or of reduced flammability or both.

The search for fire retardant vegetation continues, but to date there is little indication that such a vegetation exists. If one should be found, then it must be able to compete with native vegetation on a permanent basis. Meanwhile though, the fuelbreak project works to convert areas critical to fire control from brush to grass. It has tested new grass species; it has perfected the practical application of chemical control of vegetation in Southern California, and continues to look for lower-cost methods of changing fuel types.

Just a year ago we began plans for conflagration control studies in Northern California aimed at the objective of preventing major conflagrations during critical fire weather. Also, we have hazard reduction studies in the eastside pine type and in the treatment of Douglas Fir slash in the North Coast area.

The California Division of Forestry and the Forest Service have begun special studies to reduce the potential for large fires in Northern California. The U. S. Forest Service has started the Tuolumne

Rim Conflagration Control Project. This 50,000 acre area has been established to test the feasibility of intensifying normal land management practices to reduce the potential for conflagration type fires. By proper location of brush conversion projects, timber stand improvements such as pruning and thinning, road and power line locations and grazing management areas, we hope to modify fuel conditions and break up the area into manageable units for fire control. The State Division of Forestry has a similar project in Nevada County.

Light burning of California forests has been widely recommended. Unfortunately there are very few areas to which light burning can be applied effectively at reasonable cost. We have been working since 1959 on some of the more typical and more common problems.

In Ponderosa Pine and Blacks Mountain Experimental Forest in Lassen County results of light burning have been disappointing. When fuel concentrations under the trees were heavy the fires burned intensely, and the overstory of timber was badly scorched. When available ground fuels were skimpy or wet, hazard reduction was negligible. In one test in May 1960 we lost 55 percent of the crop trees on the plot and an additional 20 percent were badly damaged. Because of the number of dead snags created, the area is a greater fire hazard now than it was before the "light" burn. We decided that crowning could probably be eliminated if the trees were pruned for three or four feet and the prunings scattered. This was done on a similar plot in June 1961. The light burning was successful--fuel hazards were reduced, and damage was light. It was costly, however--almost \$60 per acre.



It northwestern California good silvicultural practice requires that Douglas-fir be clear-cut in 10-15 acre blocks. This operation usually leaves on the ground from 50 to 100 tons (oven dry weight) of foliage, branches, and logs. Station fire behavior specialist have worked closely with local forest officers to set up guidelines for broadcast burning tied directly to fire danger rating. They set the point where a slash fire is likely to escape because of weather and fuel moisture, and also establish a minimum point where a good clean burn is unlikely. Test burns to date have been successful in that more material has been removed by fire with fewer and less-costly escapes.

In general we can say that use of fire as a hazard reduction tool is more critical in California than any other place in the United States. Fire is being used, but each new application will require a great deal of research.

Man: Formal research in the areas of man and how he can be prevented from starting fires began in California in 1956. Most of the studies to date have been aimed at two questions. One, how effective are various types of fire prevention activities including personal contacts, signs, posters, television, movies, radio messages, and other ways of selling fire prevention. Two, what is a proper balanced fire prevention program for any given situation. This is another cooperative project with the Division of Forestry, the Forest Service, and the University of Southern California.

An exploratory study of psychological effects of fire

law enforcement indicated an apparent indifference to forest surroundings and lack of awareness of fire laws by violators. The Division of Forestry has already changed its prevention program in accordance with these preliminary findings.

We have just completed a large-scale survey of fire prevention knowledge and attitudes among 10,000 hunters, about two percent of California's licensed hunters. Preliminary analysis indicates that most California hunters think that regulation of water flow is the most important reason for being careful with fire. It also indicated that many hunters cannot actually define a forest fire according to state laws and 26 percent do not realize they can be criminally liable for negligently allowing a campfire to escape. Further studies in this program will determine the effectiveness of fire prevention, fire debris burning permits, and campfire permits, as fire prevention tools.

Lightning: Lightning prevention offers a significant promise of a major reduction in fires in California. After three seasons of anti-lightning cloud-seeding operations, we were unable to get a statistically significant change in the incidence of lightning fires. Since a major national research program "Project Skyfire" is underway in Montana, studies in California have been temporarily suspended until new leads are available for test and development here.

I believe I can predict safely though that there will be excellent developments in lightning fire prevention in the next few years and I know that California is ready to apply them.

Research Needs: I would like to close by indicating the

areas of research where an increase in effort should produce the most results in terms of fire prevention in the next few years. Man-caused prevention studies are still in the exploratory stage. That effort at the level of about two professional man-years per year should be multiplied by five as soon as possible. Fuel hazard reduction studies can be increased moderately to about twice the present size with particular emphasis on Northern California problems. Another area of research which needs attention is that dealing with the fire-starting potential of internal combustion engines. We can do a great deal more in the studies and development of better spark arresters and of learning conditions under which fires start from all kinds of internal combustion engines used in forest areas.

May I close with one observation. Fires we must prevent are those which start during critical or explosive burning conditions. Many incidental tests particularly of fire retardant chemicals and fuel modification measures are completely effective during easy burning conditions. We must be careful not to extrapolate from good results obtained under easy burning conditions and expect the same results to happen when fire weather is explosive. We not only need to be highly selective in our research efforts, we must be highly selective in the application of research results.

The fire prevention problem in California significant to fire control is to prevent fires during critical burning conditions. That is why prevention research must aim at measuring and predicting the conditions which lead to catastrophes, and then seek all measures, human, engineering, et cetera, which will eliminate fires when conflagration potential is high.

CHAIRMAN WILLIAMS: Thank you. Are there any questions of the witness ?

Is Mr. Dave Ohman here ? Would you give your name and official position, please ?

MR. OHMAN: Mr. Chairman, Gentlemen.

My name is Dave Ohman. I am secretary-manager of Keep California Green, Incorporated.

Our organization was founded nearly ten years ago by a small group of woods-oriented business leaders who recognized the need for direct action by California's citizenry to supplement the fire prevention education efforts of the State and federal agencies.

Keep California Green now is composed of more than 1000 financial supporters and workers, representing practically every county in California. Our financial support is voluntary. Our workers--many of whom also are contributors--volunteer their time and effort.

As a point of information, we are only one of many such similar private organizations active in more than a score of states.

I said a moment ago that our purpose is one of fire prevention-education. By this I am sure you will recognize that our aim's accomplishment rests in the field of promotion and publicity. And our target is, of course, the reduction of man-caused fires.

I will confine my remarks accordingly.

The matters of methods, materials and the other techniques involved in fire suppression and prevention are not ones for Keep Green to comment on here.

There was a theory in advertising and promotion, quite common some years ago, which said that if you publicize your message sufficiently, the sales will come your way--without worrying too much about exact language. There is, of course, a basic assumption here that the product is not contrary to the public's well-being.

Well, this theory simply doesn't work --a fact which has been demonstrated many times over.

I think there is an analogy here to our fire prevention promotion.

We can say Keep California Green, Keep the Redwood Region Green, Keep California Green and Golden and all the various messages of Smokey the Bear till the cows come home--perhaps to a burned up pasture.

This all does a great deal of good. But it's not enough.

Only when we can generate true self-interest on the part of the wildlands users can we be confident that our promotion is striking home.

We have to show that our product--fire prevention-- is worth buying. One rarely goes out and makes a purchase without feeling that the product is to be useful.

I suggest that we--and I mean all private and public groups active in the fire prevention-information field--can do a



more effective job if we carefully design our promotion to reach specific audiences, and meet specific needs.

A few examples:

We must publicize losses in such a way as to make them more understandable to the public. Let's emphasize the jobs lost, the losses to tax roles, the high tax cost for suppression.

We should design our prevention publicity to emphasize the resource values at stake--current and for future generations.

We must give more consideration to the different kinds of groups we are dealing with, and tailor our information accordingly. A message featuring a sad-eyed deer peering out of a sylvan setting may be just the thing for children. But it has questionable effect on a highway contractor's crews.

We should make greater use of law enforcement both as an educational tool--and as a deterrent for would-be incendiaryists, or smoker.

An additional point, somewhat related, is that we should concentrate our efforts in those areas of greatest danger. For example, it has been established that there are certain patterns of man-caused fire starts, such as the fact that some two-thirds of these are started by local users.

These examples illustrate my point. In each, I'm sure you recognize an element of self-interest. When you can make a man reach for--or protect--his pocketbook, he's sold.

To conclude: Are we getting the most effective information-

prevention job accomplished for the money invested?

That there were more than 4,000 man-caused fires last year is strong evidence that we are not.

Keep Green recommends strongly, therefore, that research now in progress which relates to the effect of current fire prevention information procedures be accelerated, and that any resulting pertinent information be made available as soon as possible.

We further recommend that present tools and actual procedures now in use by all agencies be carefully evaluated with a view toward gaining greater results from prevention-information programs, consistent with the approaches suggested here.

Thank you.

CHAIRMAN WILLIAMS: Any questions of this witness?

Thank you very much.

Is Mr. Knox Marshall here? Please give your name and official position.

MR. MARSHALL: I am Knox Marshall. My official position is a forest engineer employed by the Western Pine Association. I am here because our members thought our concern, activity and recommendations in the field of forest fire prevention and control would interest your committee.

Western Pine is a trade association whose members produce about 80 percent of all the pine lumber manufactured in the West. Here in California our industry is the third largest manufacturing industry. The growing timber crops on the commercial forest lands, in both public and

private ownership, provide the life blood for this industry, and of course the protection of this crop from fire is of vital concern to all our members.

My comments will apply to the problem on commercial forest lands only.

Because of the intolerable losses from fire in commercial timberlands the last few years our forestry committee has been more than usually concerned with fire control. We have made several surveys of our own industry to get a measure of our contribution to the fire control job, and last year it was our committee that asked the State Board of Forestry to review fire control activity including fire prevention.

We suggested then that more intensive, integrated, federal, state and private prevention effort, and especially more positive supervision of burning permits could greatly improve the protection record in the commercial timberlands.

A 1959 survey of the lumber industry's fire activity showed that private companies spent \$2, 500, 000 on fire prevention measures. This included fire patrols both aerial and ground, hazard abatement by felling snags and reducing slash, special fire road construction and maintenance, and fire prevention education through newspaper, television and radio contacts. About three and one-quarter million dollars was spent on the total fire control job. An example of how these prevention costs were divided between the various activities can be seen from the survey sample of the pine region involving 28 firms harvesting slightly over one billion board feet of timber during 1959. Their expenditures by actual costs were:

|               |   |
|---------------|---|
| \$ 17,300     | for Fire Prevention Education   |
| 128,094       | for Fire Patrol   |
| 306,964       | for Hazard Reduction  |
| <u>81,934</u> | for Special Fire Roads  |
| \$534,292     | Total Fire Prevention for the sample.<br>(Please note that this is only a sample<br>from the survey.) |

Most of our members supervise their woods activity very closely for fire prevention. Radio equipped patrolmen, special fire wardens, special delegation of authority to members of woods crews, intensive aerial patrol, over and above the level required by forest practice rules, is quite common in many companies.

I think the statistics on man-caused fires in lumber operations, considering the size of the industry and hazards of operation, show the results of this concern. On a recent forest service study of logger-caused fires on National Forests in a five-year period from 1952 to 1955, only 210 fires were available for study. In the same period the Forest Service fought over 8,000 fires from all causes. Also, please bear in mind that this industry employs several thousand men, over 1,000 bulldozers, and much other equipment, available and commonly used in our total fire control job.

You will note that over half the prevention expenditure was for hazard reductions.

The proper methods and the degree of hazard reduction after logging is a controversial question and a very complex one.

Industry spokesmen recommended some years ago that a major research project should be undertaken to clarify the degree

of slash disposal that was economically feasible, that level of reduction that would assure us reasonable protection without using an unreasonable share of the resource value, considering all the costs, benefits and side effects. Both the University of California and the Pacific Southwest Forest and Range Experiment Station are now working on such a project. Dr. Arnold, Director of the Forest and Range Experiment Station has stated that this is one of their major projects.

In the last 40 years many forestry authorities have come full circle in the approach to hazard abatement. Complete disposal is very costly. If done economically by fire the incidental damage often costs as much as a wildlife where no hazard abatement was done. Even with the best job and no incidental damage, wildfire sometimes destroys the stand you have invested in. Some of our worst damage in the last few years has occurred in stands where the best slash abatement job was done. In some cases the young growth we foster for the future crop presents a very difficult control problem. In some cases on untouched decadent virgin forest is more hazardous than a logged area.

We all agree on the danger of standing snags, and the forest practice rules in all districts require that snags be felled along with logging.

In all districts slash on the ground is reduced in roadside zones and/or on fire lanes dividing operating areas into small blocks so that a fire can be contained if one does start.

These measures, along with additional protection and patrol during harvests, and improved access from logging roads



have been considered reasonable prevention measures. We know that slash disposal is far from the sure cure some would believe. In some parts of the West it is declared more feasible to increase patrol and protection force with the money that would otherwise be spent on hazard abatement.

The use of fire to control hazards and prevent fire has often been proposed. The theory being that by burning the combustible material, wildfire can be prevented. Unfortunately this treatment has been tried, was once standard practice over large areas, but was proved too risky to use economically, and incidental damage to the timber being protected proved too costly to tolerate the method. Much research was done on this theory prior to 1925 and results proved conclusively that so-called light burning, or controlled broadcast burning, was not compatible with intensive forest management on most of our commercial forest types. Large private owners abandoned this preventive measure on their own lands when the economic results became apparent. Our forestry committee has considered the possibility of this method to control our current losses and concluded that risk, damage to reproduction, damage to residual stands of commercial timber, and expense, make it incompatible with optimum management in all but a very few specific situations. Last year the California-Nevada Fire Research Council considered this theory and came to a two-part conclusion:

1. That "Light Burning" could not be recommended as a general forestry method in California, and that
2. Continued research was warranted on the possibility

that techniques might be found that would allow safe and economical reduction of hazard by burning.

As stated before it is our recommendation that intensified, more effective, public education in fire prevention is needed, and:

We must have more positive administrative control of burning permits for the disposal of debris and for reservoir clearing in commercial timber areas. Some of our biggest losses have been from this cause.

We feel that positive improvement in safety features to prevent woods ignition from power lines is necessary. Several big losses have been suffered from this cause.

Although your subject is confined to prevention we feel very strongly about a couple of essential needs to control the fires that will inevitably start even with perfect prevention.

Initial attack, in the first few minutes after a fire start, is the most positive way to keep losses to a minimum.

There is a new development which is very effective in initial attack, the air delivery of fire retardants on the blaze. This tool is costly but most effective when the fire is small. It can be used in a large majority of cases in the daylight hours.

The economy and effectiveness of this tool depends in a large measure on the efficiency and reliability of fire detection and the availability of aircraft for instant attack.

Therefore, we feel that review and improvement in our fire detection system--much of our fire detection plan is 30 years old--along with review and improvement in facilities for air attack could buy much improved protection.

This must be carefully done because the tools are so costly, and because of flying weather and darkness the new tool cannot supplant ground crews, but we feel there is room for definite improvement in these specific activities.

Thank you.

CHAIRMAN WILLIAMS: Are there any questions of Mr. Marshall? Thank you, Mr. Marshall.

Now, would you two gentlemen in the back of the room come up, please?

MR. FENNER: My name is Ralph Fenner. I am a private forest fire consultant, fuel management specialist, self-employed. I work primarily with private industry, whose main concern is for the protection of individual property from fire rather than from the over-all application state-wide. However, I did want to mention this particular problem actually standing behind the things that Mr. Arnold just mentioned here recently, but looking at it from the other side of the picture. He spoke about certain factors of fuel, of weather and of fuel management, which are of particular interest in the fire prevention program.

We who are doing the job of fire prevention for industry have a tremendous potential for doing prevention work. We have a tremendous number of people and equipment right in the woods where the prevention job is to be done. We are building fuel breaks at the present time. We have equipment available and ready to operate instantaneously.

However, one of the factors that we need for our prevention job to make it more effective is more and completer

information on some of the factors we have been talking about. We need more better, more accurate, more timely information on where these conflagrations are going to occur. We need to be able to evaluate our fuel structures so we know where it is possible for a fire to start which can be strictly damaging. I am not particularly interested in putting out fire first. We have literally thousands of small housekeeping fires which are of no potential threat as far as losses we sustain. There are a few fires which can start which can cause tremendous damage, a hundred million board feet of timber, two million dollar loss in one afternoon. Now, these are staggering losses to an individual. State-wide, if you spread them over a large area, these are not great problems, but an individual who is facing a loss such as this, in order to effectively combat it, needs more information. Again I say we have a tremendous potential, with the lumber companies, the ranchers and the other people, to do a prevention job.

It is impossible for us, however, to stand tense throughout the entire year to do a prevention job, but if you can tell us accurately when this ten-day period is going to occur when we are apt to have 95 percent of our losses, then all the stops will be pulled out in order to do a good prevention job. We are attempting to do a good job of fuel management. Fire, in a sense is incidental to us. We don't want a fire in the woods, but we want stable fuel structures that we can depend on. Bulldozing, using fire retardants, or anything else is something that we, as engineers, can apply to these forest lands, but we must have the information, the information

basically from the research organizations, so that we, as engineers, can apply them, and we need information on weather and fuels which is too costly for an individual organization to acquire. This, I feel, is a job we would like to have the public organizations do for us, to provide us with the information we need. What we would like to see is fire held to a reasonable loss.

As I say, I don't care how big they are if they are not doing damage. We would like to limit a fire to one burning period. Fires that extend beyond one burning period are, in my opinion, intolerable. The burning period, as you probably know, is a fire starting in the afternoon, going through the nighttime period where the hazard is low, and being picked up and contained before the fire hazard increases the following day. If we do this, I believe our losses will be substantially curtailed.

CHAIRMAN WILLIAMS: Thank you very much.

Now, would you give your name and your position?

MR. HAMBLIN: My name is Art Hamblin, Fire Chief of the City of Colusa, representing the Colusa County Fire Chiefs.

At the conclusion of the Assembly interim committee meeting held in Arbuckle, October 17, 1961, Mr. John L. Meng, Consultant for this committee, requested the Colusa County Fire Chief's draft recommendations on the testimony that was presented at this hearing.

October 24, 1961, at the Maxwell Fire Station the regular monthly meeting of the Colusa County Fire Chiefs was held. The following recommendations were discussed, and hereby presented to your committee for consideration to the problem.



1. At the present time the following program of spraying roadside weeds seems to be effective--applied from December 15th to January 15th, where needed. Formula--5 pounds Simazine, plus 1 pound AmatroI per acre, 8 foot swath would cost \$21.00 per acre mile--including material and application. Follow-up spraying from the 15th of June to the 15th of July of 2 quarts of 6-38 per acre. Cost about \$9.00 per acre mile including application. This spray program will not damage any trees, shrubbery, et cetera; 6-38 is for puncture vine, dock, and will clean up roadway. Weeds will re-germinate annually so that this method will not be considered a sterilization method.
2. It should be considered that all miles to be sprayed can be from 0 feet to over 8 feet, sound reasoning will determine from zero to maximum. There are many miles that will not require treatment.
3. Recommend that the Agricultural Commissioners from the following counties be appointed as committee to study and recommend proper spraying programs and other relative information.

|                    |                                 |
|--------------------|---------------------------------|
| Walter S. Ball     | State Department of Agriculture |
| Donald J. Black    | Commissioner, Butte County      |
| A. L. Seeley       | Commissioner, Contra Costa      |
| L. D. McCorkindale | Commissioner, Fresno            |

|                   |                           |
|-------------------|---------------------------|
| Charles A. Hardy  | Commissioner, Yolo        |
| A. E. Mahoney     | Commissioner, San Joaquin |
| W. C. Disney, Jr. | Commissioner, Colusa      |

The above commissioners were contacted and selected by commissioner of Colusa County, Mr. W. C. Disney, on the consideration of cooperation, experience and from the coverage of areas that would tend to coincide with the area involved in the initial survey.

4. It is realized that this roadside problem is on a statewide basis and further surveys of the entire State is recommended by the committee with the help of all parties concerned.

5. The fire chiefs of this county realize that this problem will take the efforts of all persons that have concern with the control of the weed condition.

The Colusa County Fire Chiefs would like to extend their appreciation to the Assembly committee for their consideration and the efficient manner in which this hearing was conducted.

Thank you very much.

CHAIRMAN WILLIAMS: Are there any questions? Thank you very much.

Following is a letter to become a part of the record of this hearing.

"November 27, 1961

"Mr. Chairman and members of the Senate Fact Finding Committee on Natural Resources.

"My name is Henry Loretz and I represent the Associated Sportsmen of Calif. , which is made up of approximately 10,000 members in 100 membership sportsmen's clubs in Central California.

"Our entire membership is vitally interested in the preservation of our natural resources and since this organization was founded in 1925 we have carried on a vigorous campaign to protect these valuable resources. The forests are one of our most important resources.

"Our forests are in eventual danger of extinction unless drastic steps are taken to protect and preserve this resource. This will necessitate costly appropriations which are always difficult to obtain. I am very pleased that a fact finding committee was formed to obtain factual information on the entire situation. We are hopeful that your committee will come up with the answers and also make a very strong recommendation as to what action should be taken to protect our forests.

"The terrific influx of our population gain with resultant increase in users of the great outdoors has been one of the factors that has caused an increase in man-caused fires. Education is still one of our best weapons to use in an effort to reach the careless people. The Division of Forestry and the U. S. Forest Service continue to perform outstanding service in protecting the forests which is a most difficult task under existing conditions.

"From our observation in handling an educational

program for our own people, whose recreational interests are hunting, fishing and camping, it is our sincere recommendation that your committee give careful thought to the following suggestions:

"1. Adopt a good control burning program on a statewide basis to dispose of accumulations shown under Item 2 and in addition to set up a brush burning program.

"2. Adopt a definite program for the purpose of removing fuel in the forests which we feel is the direct cause of most of the wild fires. This would mean to remove accumulation of decadent brush, grass, dead trees and limbs and all down timber. Heavy dead timbers could best be utilized to terrace slopes to check erosion and to protect water sheds.

"3. Keep brush and grass down to a safe minimum along roadsides and property lines to minimize the danger of sparks from moving cars and tobacco thrown from cars starting a fire. This work to be done under the guidance of the Fish and Game Department to protect wildlife.

"4. Provide ample fuel breaks in all forests to confine fires.

"5. Step up tree planting program on burnt over areas. Expand program to include planting of trees on barren lands by treating soil and on land where brush is first removed.

"6. Expand present anti-litter laws prohibiting littering of highways and all inland water to include all roadways and all public and privately owned lands in the State. This would greatly reduce fire hazards.

"7. Enact strict laws governing safety type of enclosed burners (or incinerators) used by sawmills and to require that open pit burning by sawmills be protected by steel frame work covering the pit to be safely encased by small mesh chicken wire. Provide that all chimneys on shacks and buildings located in or nearby forests, brush lands and grass fields, be equipped with suitable type of screen cover to prevent sparks from starting fires.

"8. Consideration should be given to employment of physical abled people on relief, to work in camps to carry out the program of clearing the forests. This program to be on the order of the C. C. C. Camps (Civilian Conservation Corps) that were utilized during the depression years to stimulate employment. Employment of this line of work should also be offered to students during school vacation. The use of prison labor should also be considered wherever practical.

"Signed by /s/ Henry Loretz  
Henry Loretz, Secretary

"ASSOCIATED SPORTSMEN OF CALIFORNIA  
FERRY BUILDING  
SAN FRANCISCO, CALIFORNIA



CHAIRMAN WILLIAMS: Besides the meeting tomorrow, the Committee will meet on December first at 10:00 a. m. in Los Angeles. Two days later, the Committee will meet in the State Building in San Francisco to take up the bond issue.

Before I adjourn this meeting, I would like to thank all of you who have attended this hearing, and to commend you for the fine presentations you have made. The testimony presented will be of utmost value to the committee when recommendations are being developed to attempt to mitigate the tremendous losses the State is experiencing from wildfires. I would also like to thank the committee members who have participated in this hearing. With that, this hearing is adjourned.

(Thereupon the Senate Fact Finding Committee Hearing was adjourned at 12:30 o'clock p. m. , same day and date. )

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Certain defects were observed in this volume when it was received by University Microfilms, Inc. Since we were unable to locate a perfect copy, this volume was filmed as received.

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